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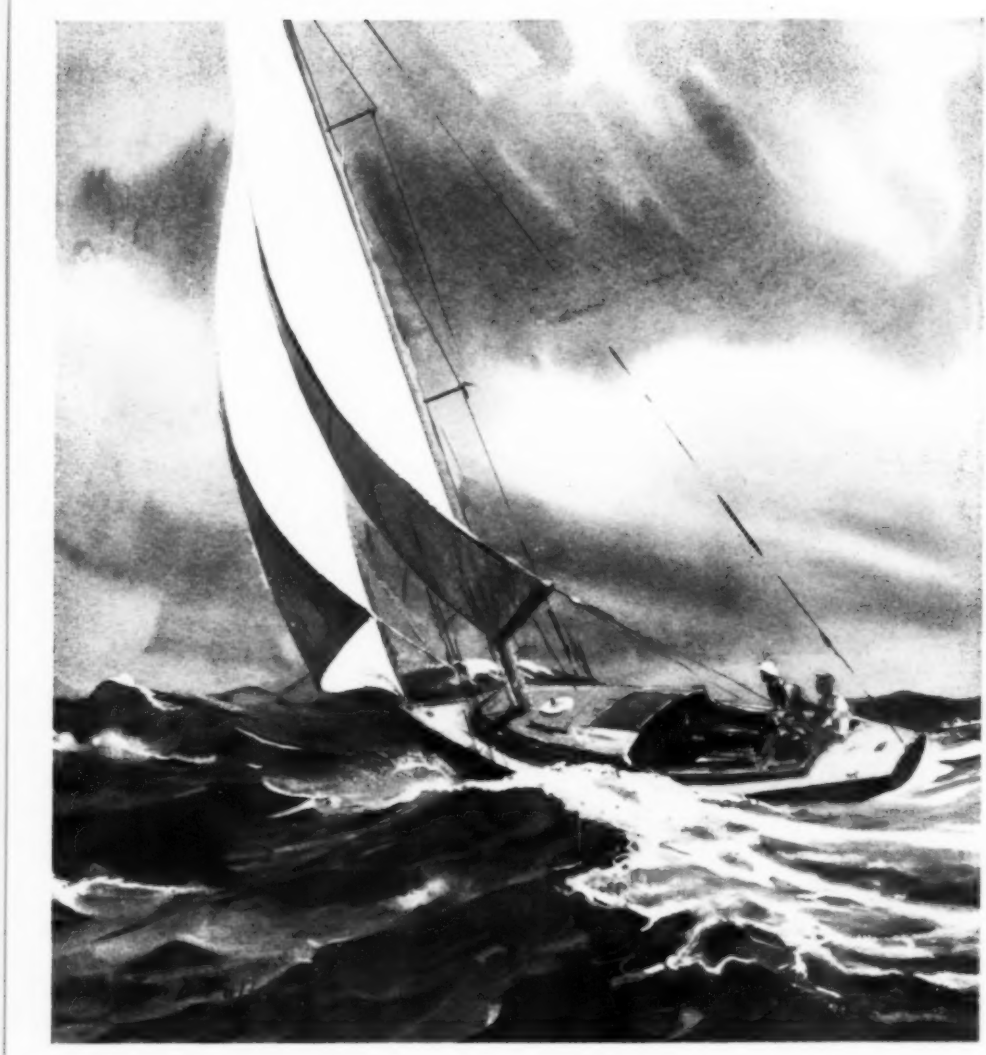

May 1953

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DRUG & COSMETIC
INDUSTRY

MAY, 1953

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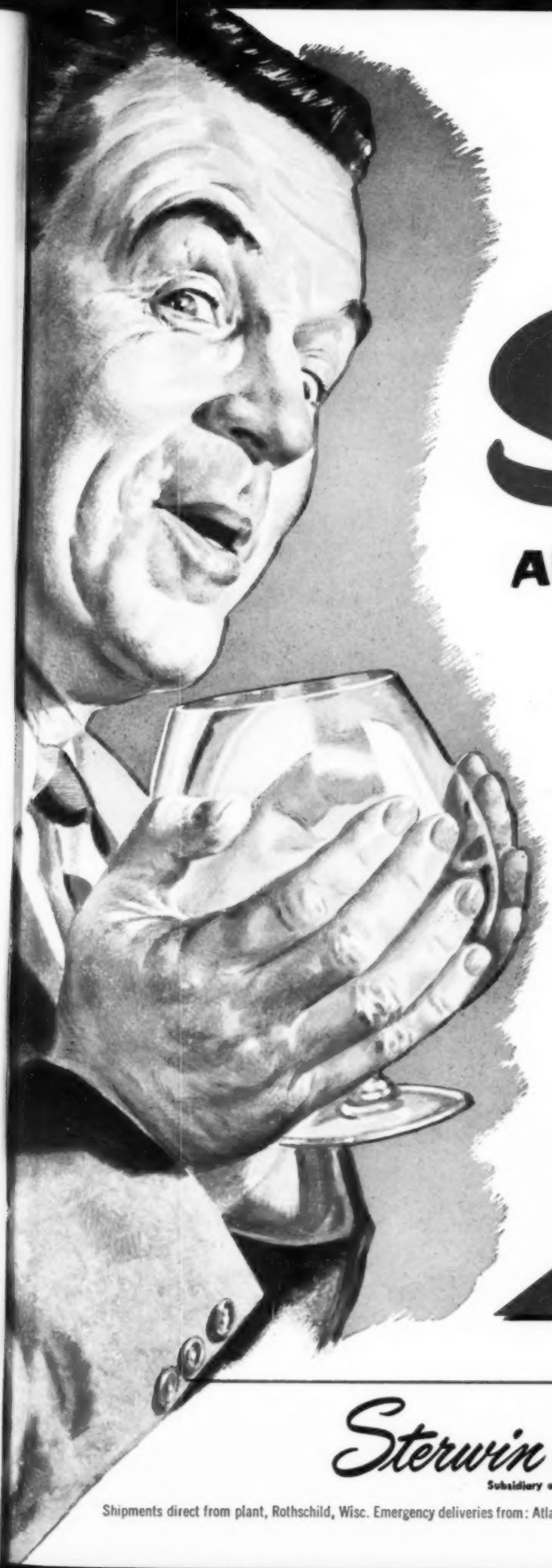

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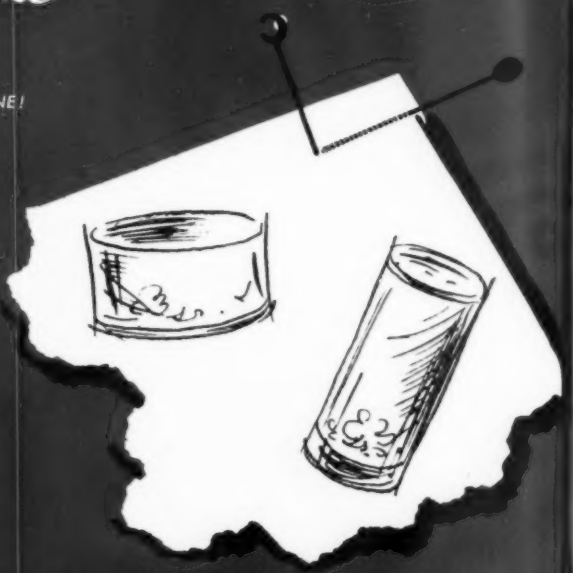

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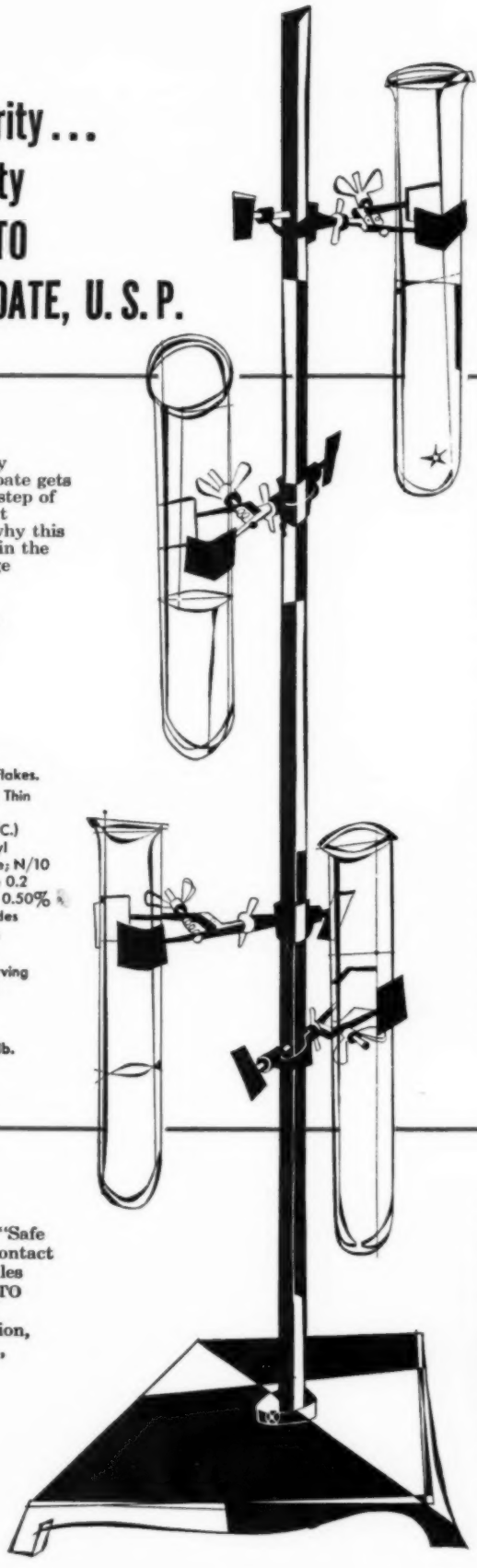

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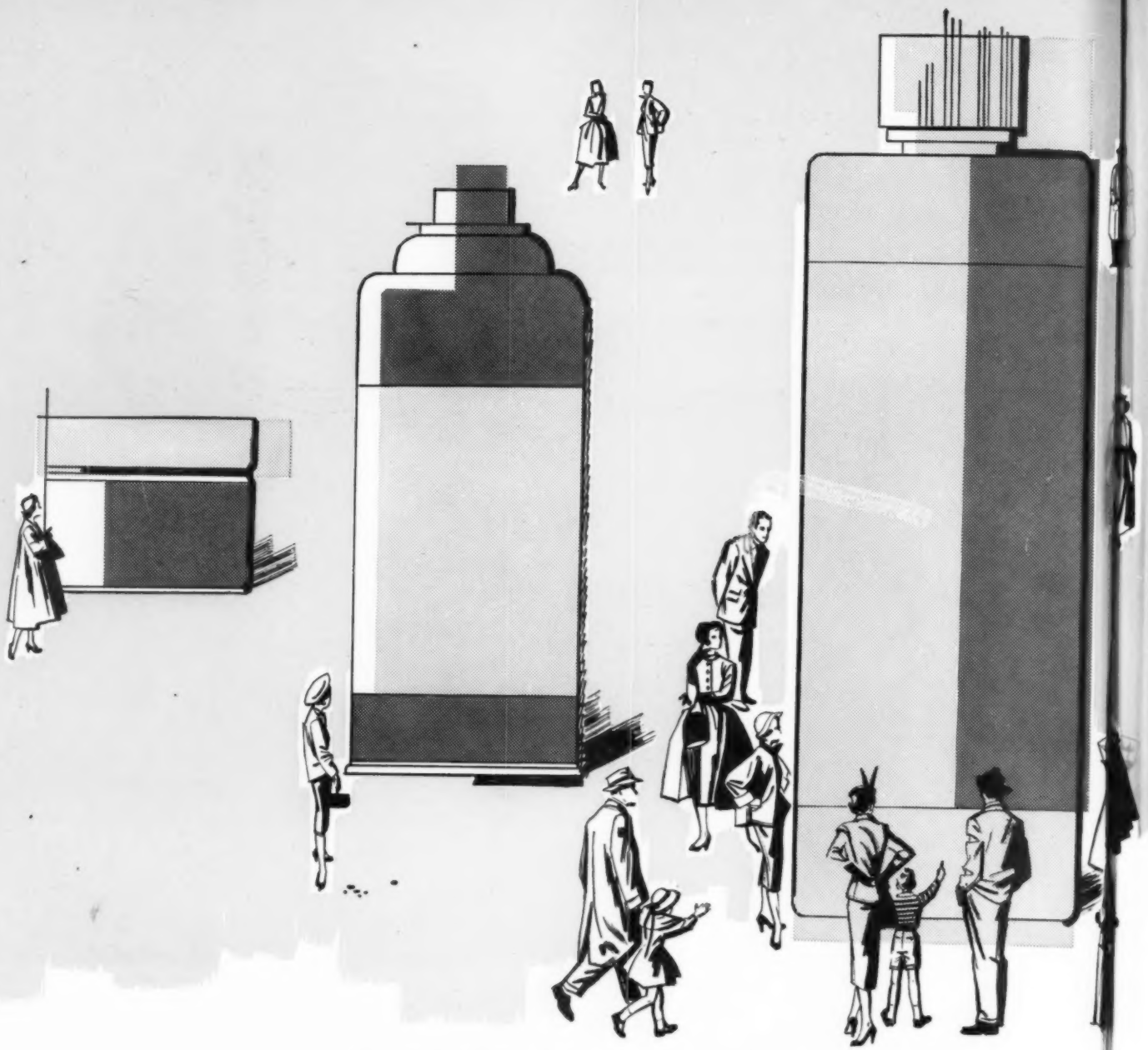

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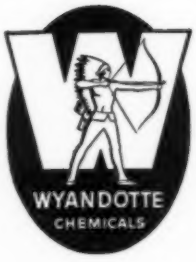

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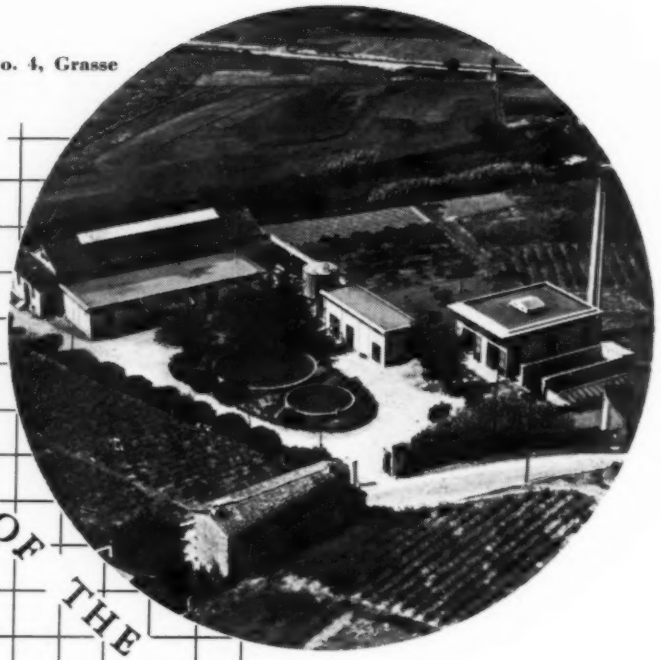

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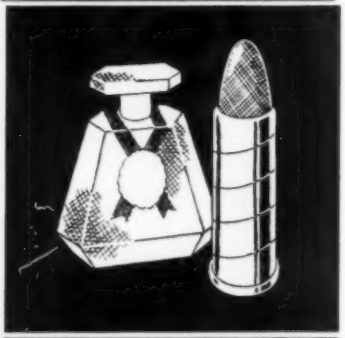

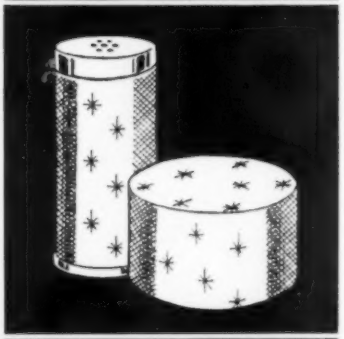

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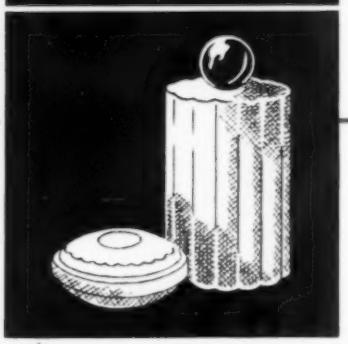

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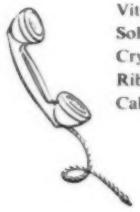

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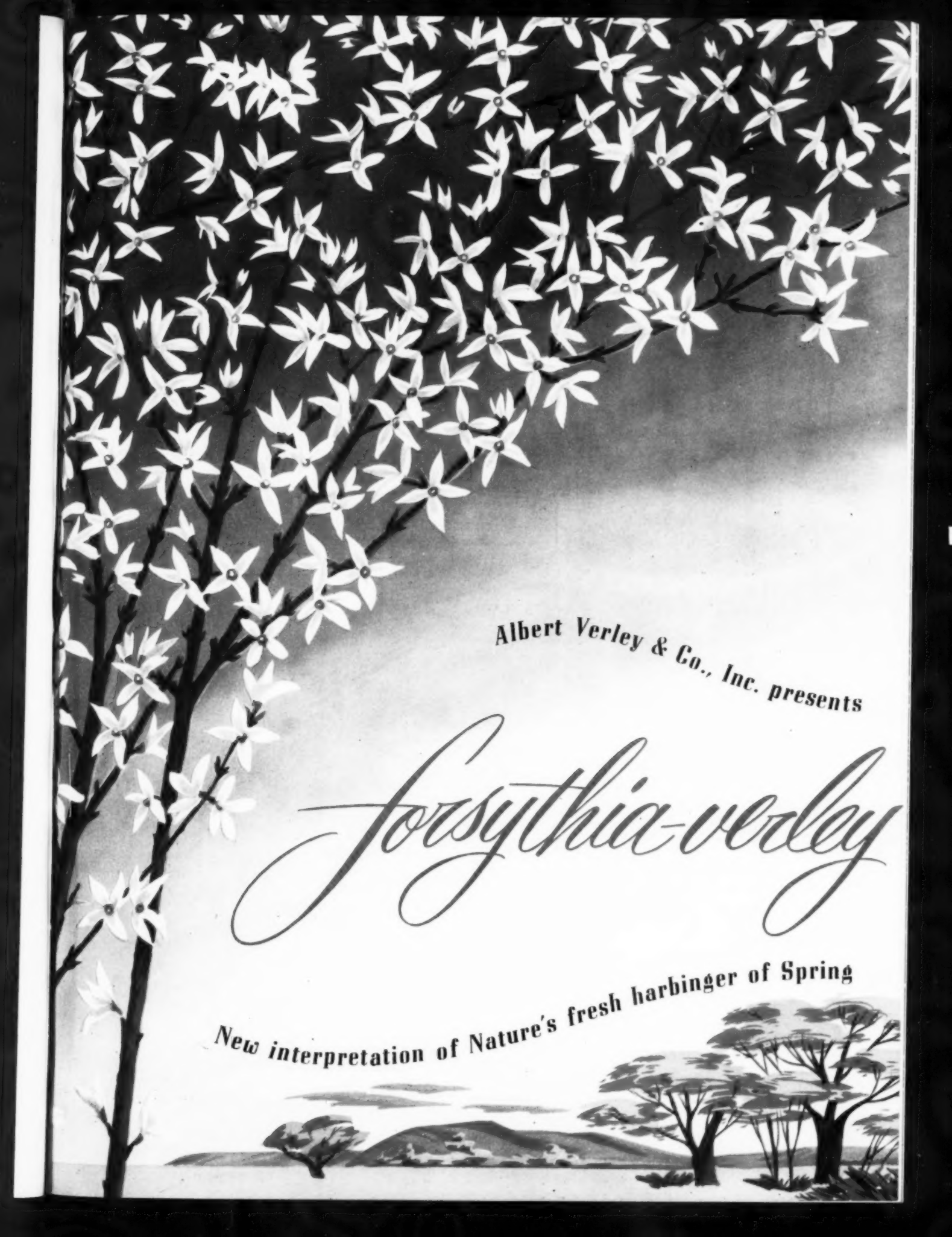
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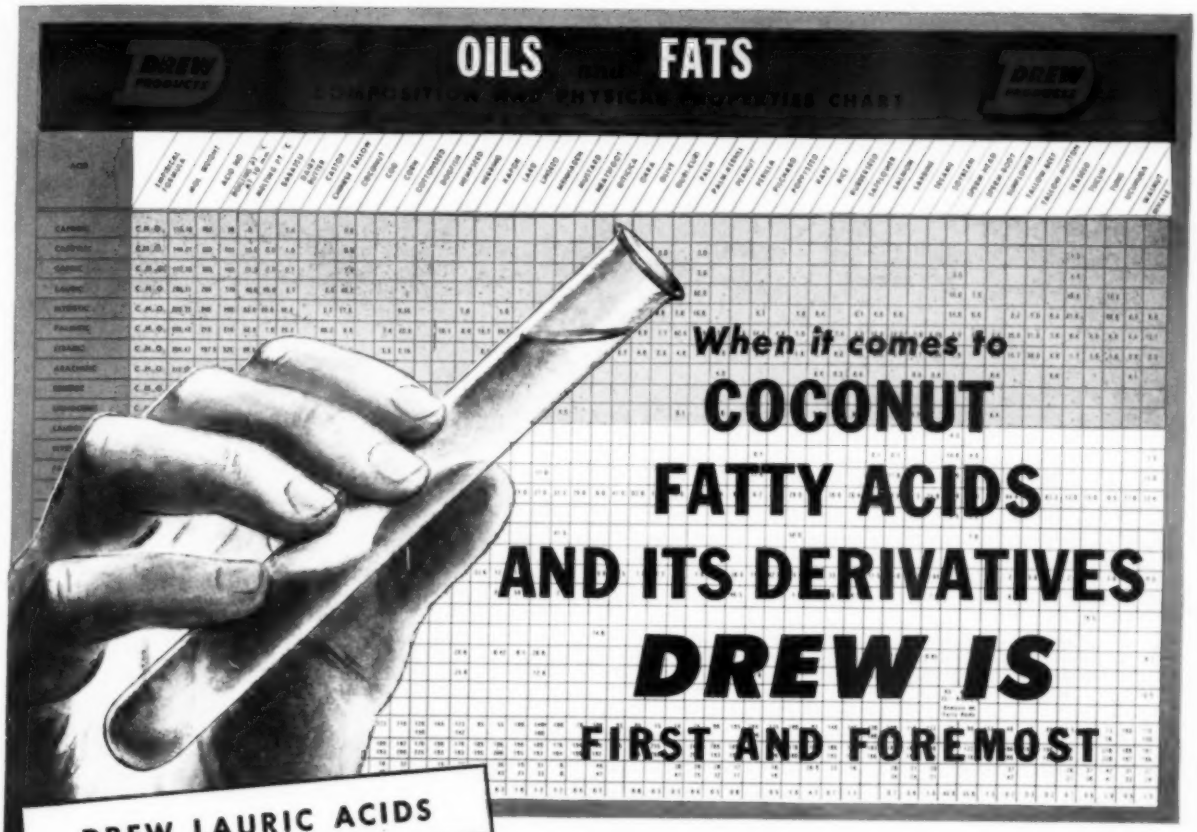

DREW LAURIC ACIDS

APPROXIMATE CHEMICAL COMPOSITION	AAB %	ABL %	AB %	ABH %	AAAR %
Caproic C6	—	—	—	—	—
Caprylic C8	2.0	1.5	1.0	1.0	1.0
Capric C10	4.0	3.5	3.0	3.0	2.0
Lauric C12	90.0	70.0	60.0	60.0	45.0
Myristic C14	2.0	13.0	18.0	18.0	22.0
Palmitic C16	—	8.0	7.0	7.0	11.0
Stearic C18	—	1.0	1.0	8.0	2.5
Oleic C18	2.0	3.0	7.0	3.0	11.0
Linoleic C18	—	—	3.0	—	5.5
Linolenic C18	—	—	—	—	—
APPROXIMATE CHEMICAL DATA	**AAB**	**ABL**	**AB**	**ABH**	**AAAR**
FFA	139-144	138-141	126-132	126-132	116-126
TITRE °C	37.0 Min.	30.0 Min.	24-28	29	30.0 Max.
IODINE VALUE	3.0 Max.	5.0 Max.	8-16	3.0 Max.	14-22
ACID VALUE	277-287	275-281	251-263	251-263	232-253
SAP. VALUE	277-287	275-281	251-263	251-263	232-253
COLOR	15.0/2.0	20.0/3.0	20.0/3.0	15.0/2.0	35.0/5.0

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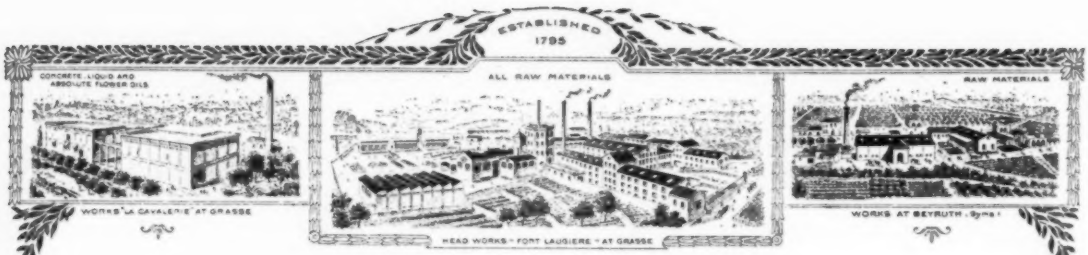

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Appearance: White crystalline material
Molecular Weight: 94.5

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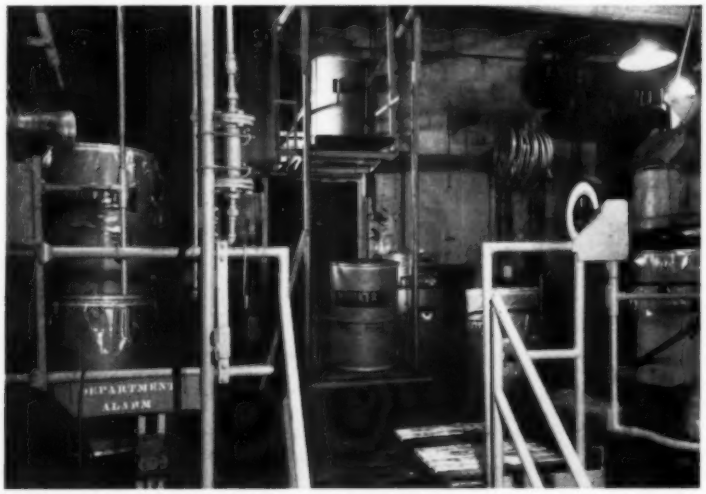
Freezing Point	61.6° C
Boiling Point	189° C



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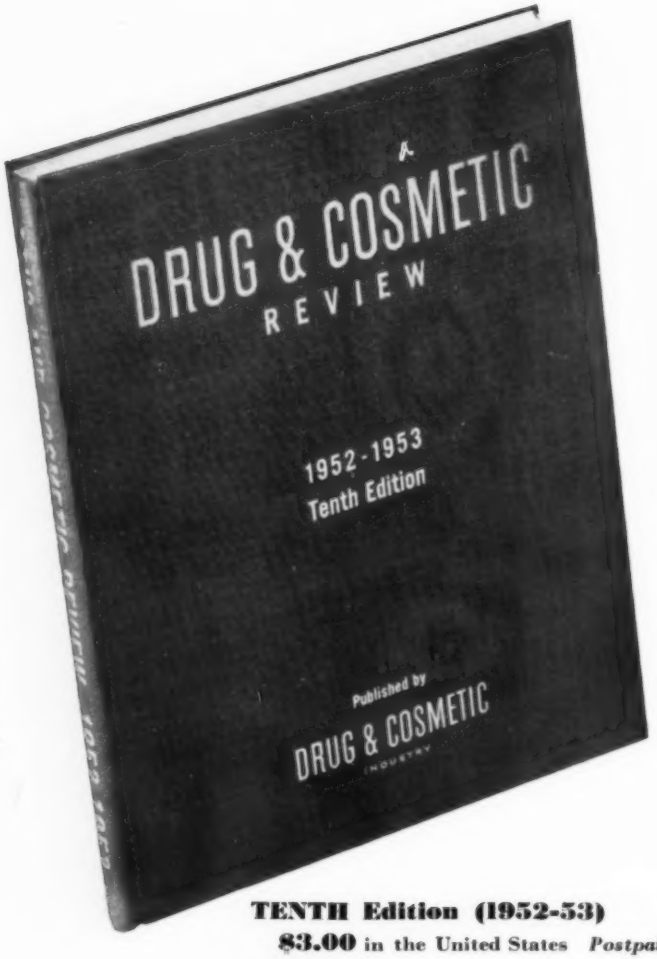

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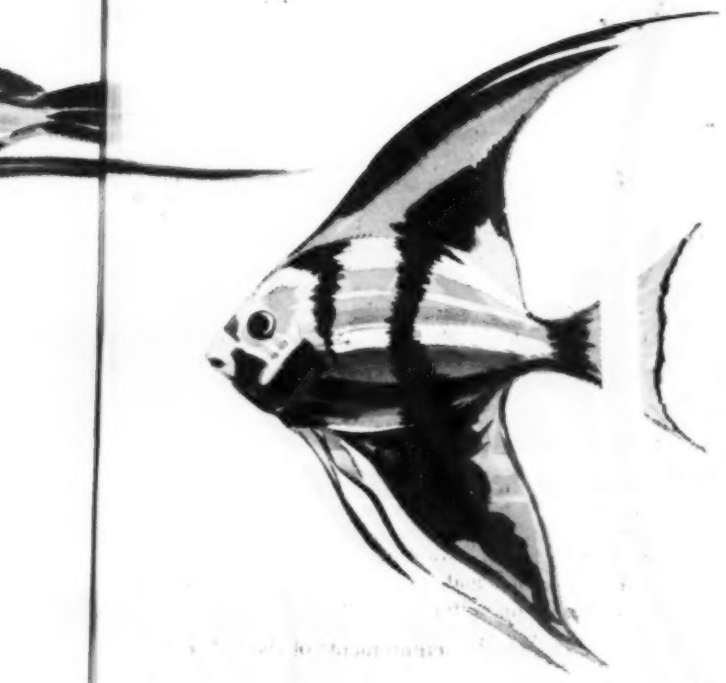

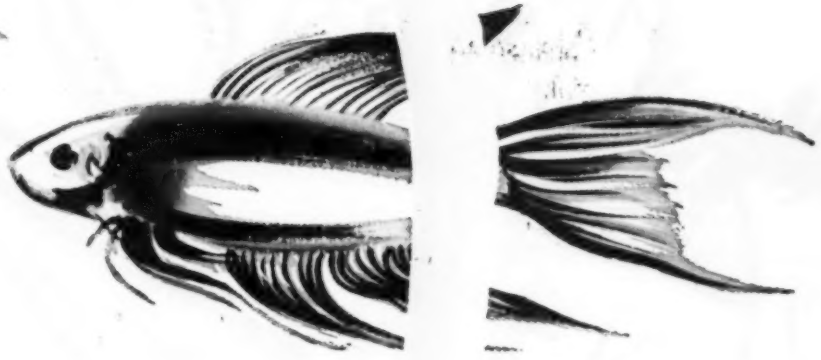

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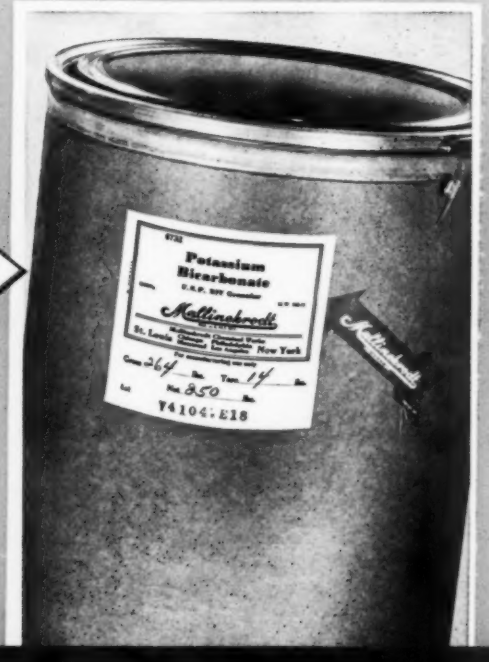


"He's vice-president in charge of imitations."

Keeping Posted

Aspirin and the Adrenals

Evidence that aspirin causes the adrenal glands to secrete their hormones (among which secretions is cortisone) which is the result obtained by administration of ACTH, was reported last month at the annual meeting of the American Heart Association, by Dr. Vincent C. Kelley, Dr. Alan K. Done, and Dr. Robert S. Ely, of the University of Utah.

A three-year study to determine whether ACTH, cortisone or aspirin is most effective in alleviating the symptoms of rheumatic fever is now being undertaken by the American Heart Association, the National Heart Institute, and affiliated British and Canadian societies. So far, the results are inconclusive, but they suggest that there is little difference in the efficacy of the hormones and aspirin.

The report at the meeting contained the suggestion that the effects of ACTH, cortisone, and aspirin are always the same because the same physiologic mechanisms are used—the powers of the adrenal cortical hormones. Aspirin, it was noted, is much cheaper than the hormones and the dangers of side reactions are much less. The doctors reported variable increases in the production of adrenal cortical hormones following administration of aspirin. These they attributed to the possibility that aspirin increased the secretion of the hormones and also increased the usage of the hormones in the blood stream.

It must be noted that this report is concerned only with the treatment of rheumatic fever—a heart condition—and not with the treatment of rheumatoid arthritis or any of the other numerous conditions for which ACTH and cortisone have proved so effective. However, it might be noted that some orthopedics have noticed a therapeutic effect from aspirin and aspirin-containing products when taken at regular intervals for the treatment of arthritic and similar pains. This effect might be due to the phenomena reported on by the doctors from Utah, but certainly the pharmaceutical effects of aspirin can hardly be compared with the effects resulting from the use of cortisone or ACTH in rheumatoid arthritis or similar serious conditions which never could be relieved in any other way.

This report will also open up the subject of the claims made for the aspirin-succinate preparations. It might be that the Federal Trade Commission might be required to reopen some of these cases and allow these preparations to be advertised in a way that is not prohibited.

Fragrance Future Bright

The future of the fragrance business is rosy, according to Samuel Rubin, president of Farberge Perfumes, in his presidential address to the recent fourth annual meeting of the Fragrance Foundation. Mr. Rubin states that it is quite reasonable to look forward to a fragrance volume of half-billion dollars a year from the present volume of one hundred million dollars. Fragrance products consist only of those cosmetics or toiletries which are employed solely for their odor-giving effect. These include perfumes, toilet waters, colognes, sachets, and the like.

Said Mr. Rubin: "In setting goals for ourselves, two things should be considered—the fact that only some 20 million people use fragrance today, leaving an untapped market of an additional 75 million men and women, young and old. Then we should take into account that driving force which makes this the greatest market in the world for consumer goods.

"Americans demand more and more of the amenities of life. They constantly look forward to new conveniences and new pleasures. They are not only receptive to new ideas and new commodities, but they are eager for new experiences, new habits, new rituals—and they're willing to pay for them. It is most significant

that, even taking into account the depreciated dollar, our standard of living has had a phenomenal rise, with consumer expenditures increasing from some 80 billion dollars in 1929 to 216 billion dollars today.

"The Department of Commerce estimates that sales of our entire toilet goods industry will total 1½ billion dollars by 1955—only $200,000 higher than 1951. (Editor's note. Mr. Rubin gives a 1951 figure here of $1,300 million, while our estimate was only $934 million for 1951, and $1,004 million for 1952.)

"This forecast can be proved a ridiculous understatement if we of the Fragrance Foundation find the key to influence the American consumer to embrace fragrance as she has the many other pleasure-producing commodities. The point I am making is that while the market may be enormous for refrigerators and television sets, automobiles and cigarettes, yet in terms of untapped possibilities, we in the fragrance industry have probably the largest potential market of all."

Warner-Chilcott Merger Completed

The final step in complete unification of the ethical drug business of William R. Warner & Co., and of Chilcott Laboratories became effective May 1, when all products of Warner-Chilcott Laboratories Division of Warner-Hudnut, Inc. were available as a single line. Edmund R. Beckwith Jr., sales manager of the division, outlined to retailers and wholesalers new, unified policy on discounts, order sizes, order receipts locations, and returns. He also outlined changes in fair trade prices of six products, allowing for greater profit for retailers on Agoral, Alka-Zane, Amusol, and Lixa-Beta. Quantity discounts on individual products, depending on package sizes, for Tedral, Proloid, Peritrate, Methium, Cellothyl, and Depancol are also stressed.

Chlorophyll Dentifrice Ineffectual

The effectiveness of chlorophyll dentifrices in combating tooth decay and gum disorders is questioned by Dr. Austin H. Kutscher and Dr. Neal W. Chilton, both of the School of Dental and Oral Surgery, Columbia University. In a recent issue of the Journal of the American Dental Association they reported on two clinical studies in which individuals were instructed to brush their teeth in the usual manner at least twice a day with a chlorophyll dentifrice.

In one study, 109 patients with chronic gingivitis or inflammation of the gums used a chlorophyll dentifrice while 137 patients similarly affected used a dentifrice of their own choice. "At the end of six to nine months," said the doctors, "no important differences were observed between the two groups with regard to changes in gingival appearance or gingival sensitivity . . . While there was some tendency towards decreased gingival bleeding in the chlorophyll dentifrice group compared with the control group, the difference was not statistically significant."

In the other study, measurements of lactobacillus in saliva were taken in 20 patients at the begining of the study and from three to six months later. A count of lactobacillus in saliva is used as an indication of dental decay. The difference was not found to be significant. "No effect on the lactobacillus count was noted," reported to the doctors.

The Problem of the Mentally-Disturbed

The seriousness of the challenge to medical science of the "alarming proportion of our population" suffering from nervous and mental diseases, was recently stressed by Dr. M. L. Tainter, director of the Sterling-Winthrop Research Institute, in a talk given before the Annual Eastern Colleges Science Conference.

"Over half of all hospital beds in the United States are occupied today by mentally-disturbed patients and others with severe emotional difficulties," said Dr. Tainter, who also declared that remarkable health gains have been scored in the last half century by the medical profession and the pharmaceutical industry. "The human life span has been extended approximately 30 years since 1900, with an average life expectancy of 100 years or more clearly in prospect as the result of the advances being made in the treatment of various cardiovascular diseases, cancer and other ailments. Medicine and pharmacology have been able to record their most dramatic victories once they have succeeded in reproducing in the laboratory the diseases which afflict mankind. We can do so now with greater frequency, thus leading to the development of more effective diagnostic procedures. A recent notable example is the drug Levophed which is proving highly promising in reducing deaths from heart attack complicated by acute shock," said Dr. Tainter.

Despite such outstanding accomplishments, he said, there are more nervous and mentally-disturbed patients in hospitals in this country than are "hospitalized from all other diseases combined, and the number is increasing." The progress made in this direction has been far less than the spectacular advances in physical medicine and surgery, said Dr. Tainter, who urged "the full weight of experimentation be brought to bear on the problem of the mentally-sick.

"We must recognize that the achievements of the medical and drug fields in helping to prolong life are being wasted, if people break down under emotional stresses and can no longer adjust to society."

Artex to Drop Claims

Advertising claims that Artex constitutes an adequate, effective or reliable treatment for neuritis, sciatica, bursitis, gout, lumbago, or any other kind of arthritic or rheumatic condition has been ordered discontinued by an initial Federal Trade Commission decision against Reliance Pharmacal Co. and its officers, Nevada City, Calif.

Principal ingredients of Artex are: calcium succinate, acetylsalicylic acid, para aminobenzoic acid, and thiamin chloride, plus excipients.

Respondents must cease claiming that Artex will arrest the progress of, correct the underlying causes of, or cure rheumatism or arthritis; will prevent any form of arthritis; will afford any relief from the severe pains of neuritis, sciatica, gout, bursitis, lumbago, or any other kind of arthritic or rheumatic condition, or have any effect on the stiffness or crippling effects that accompany some of these conditions; will have any effect upon any of the symptoms or manifestations of neuritis, sciatica, gout, bursitis, lumbago or any other kind of arthritic or rheumatic conditions in excess of affording temporary relief of minor aches, pains or fever; and will have any therapeutic effect upon migraine headaches or the pains thereof or upon female period pains in excess of such temporary and partial relief of pain as its acetylsalicylic acid content will afford.

Other representations to be stopped are; that Artex alkalies when absorbed in the bloodstream, or helps nature remove the uric acid; that calcium succinate stimulates cellular respiration, protects tissues or eliminates the toxicity of acetylsalicylic acid; that para aminobenzoic acid is effective as a tissue builder or helps nature repair damaged joints; that thiamin chloride promotes a sense of well being in persons afflicted with arthritis or rheumatism; and that acetylsalicylic acid suppresses rheumatic activity and prevents an onset of arthritis.

Percy Magnus—Man of Distinction

Percy C. Magnus, president of Magnus, Mabee & Reynard, and well-known civic leader in New York, is the latest Man of Distinction in the Lord Calvert Whiskey Company's famous series of advertisements featuring prominent business and social leaders. The advertisement outlines Mr. Magnus' rise from bank runner and office boy to top executive in his firm and leader in business, financial and civic affairs.

The four color advertisement shows Mr. Magnus on the dock in front of his Connecticut summer home. It first appeared in the May issue of Esquire (out April 10), and is being followed by appearances in June True (out May 19), June Cosmopolitan (out May 27), June Elks (out May 25), and June 15 Life (out June 12).

Squeeze Bottle Decision Reversed

The U. S. Court of Appeals for the Seventh Circuit reversed the District Court and decided in favor of the Elmer E. Mills Corporation in the suit of the Plax Corporation charging patent infringement. The rival processes under consideration are for the manufacture of plastic "squeeze" type bottles and other type containers being widely used today. The Mills processes are also patented.

Earlier findings of the lower court that certain of the Plax patents are valid were affirmed. However, it was clearly stated that there is no similarity in principle between the two manufacturing processes and that, therefore, no patent infringement exists.

Dandruff Products Tax Exempt

The Internal Revenue Bureau has ruled that preparations used or intended for use as remedies for, or as applications for relief of dandruff (including the incidental elimination of dandruff scales or flakes), are not subject to the 20 per cent Federal excise tax on cosmetics, provided the labels, leaflets, or other advertising relating thereto, are so limited as to exclude any reference to the use of the preparations for toilet purposes. The ruling was published in the Internal Revenue Bulletin, April 13, 1953.

It is understood that the Bureau will not object to use of words such as "lotion," "ointment," and "cream" in the brand name of a dandruff preparation so long as the product is not also held out for toilet purposes. However, use of such words as "tonic," "hair oil," "hair dressing," "hair restorative," and "pomade" in the brand name of a preparation intended for treatment of dandruff will make the product subject to tax.

If one is in doubt, in view of this ruling, whether or not a particular product is taxable, he should communicate with F. A. Katon, Sales Tax Section, Internal Revenue Bureau, Washington 25, D. C.

State Bill Outlaws Substitution

The Drug, Chemical, and Allied Trades Section of the New York Board of Trade, has recommended, through its Coordination Committee headed by William W. Huisking, vice-president of Chas. L. Huisking & Co., that the group promote coordination of Federal, State and municipal laws and regulations which would serve to prohibit substitution of drugs, and they have recommended as a uniform law a bill recently enacted and signed by the Governor in the State of Oregon.

The "model bill", which in the State of Oregon amends the Pharmacy Law, and which provides in concise form a measure to prevent drug substitution, reads:

"No person, being requested by means of a prescription or otherwise to sell, furnish or compound any drug, medicine, chemical or pharmaceutical preparation, shall substitute or cause to be substituted therefor without notification to the prescriber or purchaser, any other drug, medicine, chemical or pharmaceutical preparation. No pharmacist or any other person, requested by means of a prescription, shall substitute for a specified brand named product without the expressed authorization of the prescriber."

Vitamin B_6 for Sobering Up

Vitamin B_6, or pyridoxin, is claimed to sober up inebriates in two or three minutes, according to a note in the April 24 issue of the British Medical Journal. Dr. Vernon P. Woodsworth said he first prescribed

pyridoxin in cases of alcoholic hangover. The results were dramatic, he found, and akin to a glucose shot in the veins of an aggressive hypoglycaemiac, or patient with a sugar-short blood supply.

He tried it out on a "typical case" of a 45 year old drunken woman who was singing, swearing, and staggering. Three minutes after an intravenous injection of 100 milligrams of pyridoxin "she became quiet and apologized for the trouble she had caused." Dr. Woodsworth concluded that pyridoxin was a specific antidote to alcohol and may possibly be of use in differentiating between cases of drunkenness and head injury.

"I'll just have a glass of B_6, I have to drive."

As Chilson Looks to the British

Publishing in the April issue of their magazine, Soap, Perfumery & Cosmetics (London), the article which appeared in our November 1952 issue by Francis Chilson under the title of England Today, and much of Mr. Chilson's travelogue from the same issue, the editors of that journal say editorially:

"Internationally celebrated as an industrial consultant of High Rank, Dr. Francis Chilson is also a forthright, penetratingly analytical and provocative writer, frequently humorous, and always about 85 per cent uninhibited. His Management Forum is one of the most outstanding of the regular features of the American Drug and Cosmetic Industry. We don't always agree with "Frankie" Chilson—far from it—but we always take notice of what he writes. He is by way of being an institution or what Arnold Bennett would have called a "card": a character rather larger than life and as American as Al Capp's Li'l Abner."

Campho-Phenique to Stop Claims

Claims that Campho-Phenique is a remedy or cure for pimples, acne, or skin rashes, or that it has any value in the treatment of insect bites other than as an antipruritic and surface antiseptic, will *not* be used in the future under the terms of a stipulation signed by Sterling Drug, Inc., according to the F.T.C.

Sleep-Eze Not Sleeping Pill

Claims that Sleep-Eze is a new product, does *not* constitute a sleeping pill, and is safe or harmless, must be discontinued under terms of a stipulation signed by Sleep-Eze Company, Long Beach, Calif., according to the F.T.C.

Kleinfeld in Private Practice

Vincent A. Kleinfeld, well known to this industry, has resigned as special assistant to the Attorney General of the United States to resume private practice of law at 1026 Woodward Building, Washington 5, D. C. For ten years in charge for the Department of Justice of litigation under the Federal Food, Drug, and Cosmetic Act, Federal Trade Commission Act and related regulatory laws, Mr. Kleinfeld will be distinctly remembered as chief counsel to the House Select Committee to Investigate the Use of Chemicals in Foods and Cosmetics (the Delaney Committee). He is co-author, with Charles Wesley Dunn, of two books on the Federal Food, Drug, and Cosmetic Act, and of a third book to be published shortly.

Health Insurance

A most interesting bulletin on Voluntary Health Insurance for the Individual Subscriber—Its Problems, Progress and Promise, has been issued by the Health Information Foundation. It is explained that while insurance companies started out as purveyors of individual policies, but have since moved steadily in the direction of group coverage, Blue Cross and Blue Shield, which began as group plans, have only recently become active in the field of non-group coverage.

The difficulties with individual subscriptions, as opposed to group coverage, and the reasons for the higher cost and greater risk in individual coverage are explained very clearly. This four-page bulletin gives quite a comprehensive picture of the health insurance situation.

Bragg Nutrition Claims Stopped

Claims that Bragg Calcium prevents or retards the degenerative processes of old age must be discontinued under terms of a stipulation signed by Live Food Products Company, Burbank, Calif., according to the F.T.C.

The company also agrees to stop representing that deficiencies of vitamins or minerals exist in the average diet or that it is necessary to supplement the average diet with the elements contained in Bragg Calcium or Bragg Hy-Trition; that either Bragg Flormucin Regular or Bragg Floramucin with Cascara is a mucin or that either product supplies mucin; that Bragg Liquid Aminos conditions the body organs or that it is a complete nutritional substitute for meat; that beef supplies vitamin C or that any other food supplies a significant amount of a food element when such is *not* a fact; and misleadingly comparing the nutritional value of foods with that of Hy-Trition or any other product.

Soda-Fountains Passing

The drug store soda is on the way out, and is being replaced, at least partly, by a home-style confection, according to the Liquid Carbonic Corporation in letting it be known that it has discontinued manufacturing soda fountains. W. A. Brown, president of the company, ascribes the slowing of the business to home preparation of sodas. The company's building in Chicago used for production of fountains has been leased to the Raytheon Manufacturing Corporation. Belmont

Radio Corporation, a Raytheon subsidiary, will use it to assemble and store radio and television sets. Liquid Carbonic, which also makes dry ice, carbonia gas, oxygen, acetylene, and bottling machines, will continue to supply replacement and repair parts to fountain operators. It will continue production of fountains in Canada.

We think this change should be chalked up in favor of the deep freezer and the freezing compartment of modern home refrigerators. Ice cream is always available in most of the homes having these appliances, and with a bottle of cream soda, orange soda, or a number of others, an ice cream soda at home is a simple thing. We've seen it happen in our house but failed to sense the significance of the fact that here was a basic change in an age-old industry.

Claims Stopped for Female Product

A complaint has been issued by the Federal Trade Commission against Doris Savitch, trading as Personal Drug Co., New York, and Leo Savitch, manager of the company, questioning claims that Quick-Kaps and D-Lay Capsules will provide immediate and effective relief from delayed menstruation when caused by minor functional disorders or borderline anemia. Claims cited and challenged in the complaint include:

"At last—it *can be sold*, a new extra effective Doctor approved formula—Quick Kaps capsules may relieve you of your biggest worry—when due to minor functional menstrual delay or borderline anemia." These statements are alleged to be misleading in material respects and constitute "false advertisements", as that term is defined in the Federal Trade Commission Act.

Cosmetic Sales Top One Billion

Sales at retail of the perfume, cosmetic and other toilet preparations industry not including toilet soap, passed the one billion dollar mark for the first time in 1952. According to the annual estimate made by the T.G.A. in collaboration with the editors of BEAUTY FASHION MAGAZINE (affiliated with Drug and Cosmetic Industry), total sales were $1,004,000,000, as against $912,800,000 in 1951. This again sets a new high record in the history of the toilet goods industry.

Sales of taxable toilet preparations gained approximately 12 per cent during the year. There was in fact a net gain in tax collections for the year, despite the fact that products intended for use on babies and products sold to beauty and barber shops for actual use in the shops were exempted from the excise tax about midway in the year. Non-taxable toilet preparations which includes such things as dentifrices, shaving cream and practically all shampoos, also showed a substantial percentage gain over the preceding year. In the case of dentifrices this increase amounted to 16.3 per cent as against a normal increase of approximately three per cent, annually. This substantial increase was due largely to the introduction and heavy sale of dentifrices containing chlorophyll. It is a noteworthy fact that new developments in the dentifrice field always add substantially to the total market in spite of the widely held belief that this market has nearly reached the saturation point. Shaving creams, which for several years declined, but which gained slightly last year, showed a gain of six and one-half per cent. The rapid growth of hair preparations including shampoos slackened materially but this group recorded a gain of approximately eight and one-half per cent.

Fragrance products showed a very modest gain. Perfume sales as such were again slightly below the previous year's level, although the rate of decline in this market seems to have been checked. Solid colognes, which have shown a substantial gain in preceding years, failed to maintain this good record in 1952.

The pattern of distribution continued to show material changes during the year, although no new types of outlets for the sale of toilet preparations appeared. The gains in the grocery super-market and other self-service outlets were spectacular and there continued to be a steady gain in sales through house-to-house canvassers. The T.G.A. estimates that independent and chain drug outlets still maintain their lead in point of percentage of sales although the percentage declined slightly to 34½ per cent. Department stores and specialty shops remained in second place although their percentage fell sharply to 22 per cent. House-to-house canvassers accounted for 17½ per cent of the total market and grocery supermarkets for 14 per cent. Limited price variety chains declined in importance to approximately eight and one-half per cent.

The remaining volume is scaled over various other types of outlets of lesser importance. The increase in sales through super-markets, while it did not extend throughout the entire range of toilet goods and was considerably larger on well-known and nationally advertised staples, did show that other types of toiletries were able to find sales through these outlets. Several most interesting experiments along these lines were made during the year and the success of some of them led many to believe that this outlet will continue to grow in importance for a wide range of goods.

The percentage-wise decline in department store sales, while not unexpected, was disappointing to many companies which have long considered these outlets of the utmost importance to them.

PERFUME, COSMETIC & TOILET PREPARATIONS
SALES AT RETAIL AS ESTIMATED BY T.G.A.
(Figures do not include toilet soaps)

Year	Sales in Millions of Dollars	Year	Sales in Millions of Dollars
1914	39.8	1933	300.3
1915	45.0	1934	324.4
1916	71.5	1935	322.1
1917	95.4	1936	336.5
1918	103.7	1937	374.0
1919	116.5	1938	412.3
1920	129.5	1939	425.1
1921	126.0	1940	449.9
1922	147.3	1941	463.6
1923	194.6	1942	481.4
1924	220.3	1943	507.5
1925	256.4	1944	593.0
1926	300.2	1945	711.3
1927	329.7	1946	758.2
1928	353.2	1947	743.8
1929	378.4	1948	749.8
1930	336.2	1949	770.8
1931	297.1	1950	840.1
1932	288.4	1951	912.8
		1952	1,004.0

Substitution and Competition

Whether the pharmaceutical manufacturers like it or not they must realize that the matter of substitution of drug products on prescriptions is very closely associated with competition between these manufacturers as this competition is being practiced today. And with the general feeling that this competition is to become still keener as we move away from the lush days of pharmaceutical discovery which brought the industry to its dizzy peaks of recent years, efforts to bring about effective control of this practice might be tinged somewhat with self interest based on the competitive angle resulting from this practice.

Until the present time, the pharmacy laws of this country have considered substitution of drugs as the substitution of one substance for another. To be illegal under these laws, substitution must involve two different products of different identity so far as chemical or some other means of identification is concerned. A difference of brand identity has not been sufficient to constitute substitution under these laws.

However, the State of Oregon recently enacted a law which makes substitution of one brand of a drug for another brand of this same drug illegal. This bill reads:

"No person, being requested by means of a prescription or otherwise to sell, furnish or compound any drug, medicine, chemical, or pharmaceutical preparation, shall substitute or cause to be substituted therefor without notification to the prescriber or purchaser, any other drug, medicine, chemical or pharmaceutical preparation. No pharmacist or any other person, requested by means of a prescription, shall substitute for a specified brand named product without the expressed authorization of the prescriber."

The Drug, Chemical, and Allied Trades Section of the New York Board of Trade has sent to all their state chairmen a copy of this bill with a view to having it enacted eventually in all states of the Union. This work is being carried on by the Coordination Committee of the Section under the chairmanship of William W. Huisking.

If this bill could be enacted in every state in this country and eventually incorporated into the Federal

Food, Drug, and Cosmetic Act, and be strictly enforced, it would have a profound effect upon competition in the pharmaceutical industry. It would enhance the value of the trade-mark in pharmaceutical marketing, it would increase the importance of the detail man's efforts to get the doctors to prescribe by brand or manufacturers' names, it would decrease the importance of price cutting and free goods to the druggist, and, on presently known specialties, it would tend to create a much more static condition.

Of marked advantage to the industry in the long run, legislation of this type, strictly enforced, would tend to keep the industry on a high plane and make it truly "ethical." After all, while low prices for drugs should be the aim of every manufacturer so that the most people can share in the benefits of these discoveries, the marketing of drugs on the basis of price alone is hardly conducive to large research expenditures for the discovery and development of new products of still greater benefit to mankind in the control of the diseases which continue to plague him.

If the sharp merchandising practices which are slowly but surely making their way into the marketing of ethical drugs, were retarded in their growth or removed from the industry to a large extent, the industry could turn more of its attention and more of its expenditures to the development of new products and to greater education of the medical profession in the proper use of these products. Furthermore, manufacturers could afford to be still more careful in the development of their products and not hesitate for one moment to reject a proposed new product because of some untoward developments in its application.

Under existing circumstances where substitution is impossible or most difficult to control, the originator of a product cannot even get his product on the market before other manufacturers, who had nothing to do with the discovery or development of the product are flooding the market with it. The only instances where this is not the case are those in which the products being marketed are difficult to make, or in which raw materials for their manufacture are not freely available.

While it is freely granted by leaders in the pharmaceutical manufacturing industry that products for the cure or control of some of the most dreaded and widespread diseases would have to be made freely available at the lowest possible prices to all who could use them, the example of isoniazid is a case in point.

Here was an instance in which two pharmaceutical manufacturers had spent vast sums of money in research on drugs for the treatment of tuberculosis. Quite independently the two manufacturers both came up with the same chemical compound. Neither knew that the other was working on the product until they crossed each other's trail in seeking out specialists to conduct clinical work on their products. The news of the use of the drug in New York City hospitals broke in the newspapers prematurely and everyone and his brother in the industry immediately became a manufacturer of this product, several of them circulating ambiguous releases giving the impression that they had been investigating the drug much longer than the discoverers themselves knew of the drug's existence. This from so-called "ethical" manufacturers. A patent on the use of the drug was granted shortly after, but the manufacturer obtaining the patent did not believe that it appeared very ethical for him to enforce a patent making him the exclusive manufacturer of a drug for such a scourge of mankind as tuberculosis, so he granted licenses to all who applied. Before very long there were more than thirty brands of isoniazid on the market. The price has since been cut to the point at which no profit at all exists.

What about the two manufacturers who invested large sums of money in the search for drugs to control tuberculosis—a search which culminated in the discovery of isoniazid? They never had a chance to get this money back. How will the heads of these companies feel about undertaking large scale investigations into the discovery and development of new and more effective drugs for the control of other very important diseases, or for still better control of tuberculosis itself since isoniazid is certainly far from the final answer?

If the industry believes that the enactment of laws to control substitution is merely to result in the elimination of the manufacturers who purposely make pharmaceutical products which resemble in every possible way the outstanding specialties in the industry, they have another think coming. Nor should they be of the opinion that the only other possible effect of such laws will be the control or elimination of druggists who indulge in the practice of buying these obvious imitations and the lowest priced of all manner of drugs for use in filling prescriptions whether or not the prescriptions carry the brand or manufacturers' names of the products prescribed.

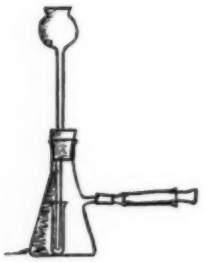
It is not as simple as this. The enactment and enforcement of no-substitution laws in this country will put a tight check-rein on the practice of imitation or duplication or competition—if you want to dignify it by that name—among the so-called ethical manufacturers themselves.

It will still be true that the originator of a product will need a little time to let it be known that he is the originator and to get doctors to prescribe his product by brand or manufacturer's name. But barring premature publicity, and also assuming that the product is not held out to the public by lay news writers as a sure-cure for cancer, tuberculosis, heart disease of any nature, or any other disease that the public at large deeply dreads, it will be some time before the other manufacturers recognize the success of the product and the size of the market. And until they do recognize these factors, they certainly will not attempt to imitate it—or meet the competition—and then, if the substitution laws are strictly enforced, it will be too late to gain any position in the market to make such imitation worthwhile.

Counting Bacterial Colonies from Lip and Mouth.

Unintentional efforts to sabotage a new and thriving industry based on test tube findings are scarcely justified, for chlorophyll does not work that way. It works evidently only in nature in correlation with living plant, animal or human tissues. Unbiased research tends to support this contention. Future experiments should be founded on the biological metabolism of chlorophyll in vivo before drawing any arbitrary conclusions.

An Analysis of the Chlorophyll Problem



*by Arthur H. Bryan, M. A., V. M. D.**

Making Serial Dilutions.

Bloodhounds on Broadway, or elsewhere for that matter, aren't needed these days, for we are a smell-conscious nation. Newspapers, magazines, radio and television ads blare out the horror of odors, B.O., M.O., F.O.'s with cures warranted to make the user as pure as the riven snow. The drug and cosmetic and the candy industries have been charged with the job of deodorizing man and beast alike, and even the air we breathe. The panacea is chlorophyll anti-smelling absorbent compound, derived from green plants.

In the play "Arsenic and Old Lace" the benevolent old ladies poisoned their lonely old men with arsenic and buried them in the cellar. Many poisoners, like the Borgias, used arsenic as the modus operandi to effective murder. Nevertheless, arsenic has been prescribed by doctors for years therapeutically as a tonic and treatment for syphillis and yaws, etc. The dose and concentration is of course the difference between life and death. There are dozens of chlorophyll preparations on the market today to testify apparently overwhelm-

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ingly to the deodorizing action of chlorophyll, with published research to back them up. There remain, however, plenty of manufacturers in the drug and cosmetic industry who do not use chlorophyll in their preparations. They claim that chlorophyll has no deodorizing value, and are ready to present seemingly irrefutable evidence to prove their contention, too. Neutral or impartial surveys of research data are obviously indicated.

Furthermore, just as viruses will grow, multiply, and are activated only in living tissues, so from our observations chlorophyll acts only in association with living plant, animal, and human structures.

Modern nuclear physicists have split the atom, but have failed to carry out the simplest plant synthesis in test tube glass, namely the union of CO_2 and HO_2 in the presence of light and chlorophyll to form starches and sugars. Chlorophyll as a deodorant evidently works similarly in the body (*in vivo*), but usually not in glass (*in vitro*).

In addition, just as the sulfa drugs and the antibiotics are selective in their action, so too is chlorophyll apparently. Chlorophyll is not specific for all types of odors. In our animal or human clinical experiments, the results, though definitely favoring chlorophyll "quantum sufficiat" as a deodorizing agent, show individual failures in both animal and human guinea pigs. This suggests individual idiosyncrasies and tolerance variables for chlorophyll when used to counteract all effluvia irrespective of origin or source.

The approach, therefore, to the chlorophyll problem must be expanded to include much more extensive physiological research work in the "biochemistry of chlorophyll metabolism" before trying to wreck a new and thriving industry.

Nature and Chemistry of Chlorophyll

Chlorophyll is the green coloring matter of all green plants, produced by chloroplasts, and used in the photosynthesis of food in the leaf. The leaf is the world's daylight food factory. Hence chlorophyll is one of the most important substances in the entire field of biochemistry.

The blue-green chlorophyll A, $C_{55}H_{72}MgN_4O_5$; and the yellow-green, $C_{55}H_{70}MgN_4O_6$, are two esters related to hemin, bearing the color principle of chlorophyll. Water-soluble chlorophyll is a mixture of chlorophyll in pigments derived from chlorophyll by hydrolysis with KOH or NaOH. There are two common forms, ioschlorophyllin (A) $C_{34}H_{30}MgN_4O_5$, and (B) $C_{34}H_{30}MgN_4O_6$. Chlorophyllan is the green crystalline compound obtained from the alcoholic extraction of chlorophyll. Xanthophyll is the ester formed when leaves turn brown. Chlorophyllase is the enzyme obtained by hydrolyzing amorphous chlorophyll to chlorophyllide. The two preparations used most widely in the drug and cosmetic industry are sodium iron chlorophyllin and sodium copper chlorophyllin.

Veterinary Aspects

Virtually all pharmacological and research techniques require animal experimentation, and the veterinarian is often the initial observer. Herbivorous animals, such as cows, horses, sheep, deer, buffalo, zebras, elk, etc., when feeding on green pastures are relatively free of body or mouth odors. Should mouth odors exist, the veterinarian automatically looks for diseased teeth. During the winter months, when the domestic animals are stabled and fed silage and dried grains, odors are usually in evidence.

In initial comparative observations it should be noted that horse, cattle, and sheep dung has much less odor than human or carnivorous excreta. There are many

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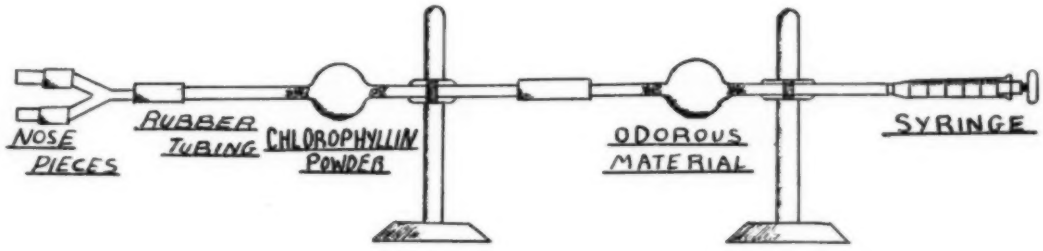
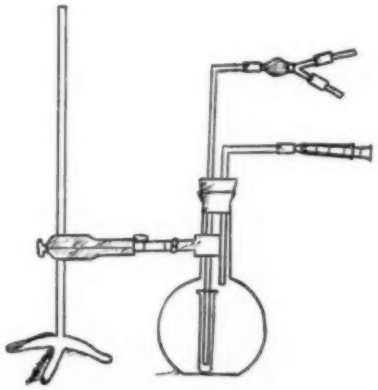
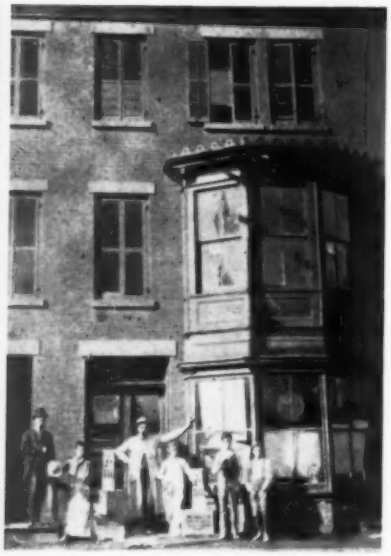




Mennen Today—and Yesterday

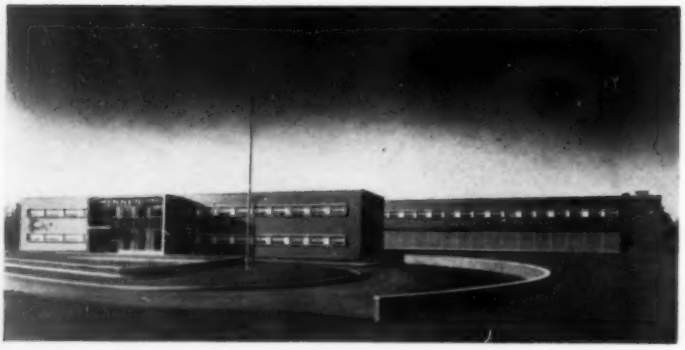
by Frank S. Child

William Mennen, Sr., president of the Mennen Company since 1916, with his sons, George (left), vice-president in charge of production, and William, Jr., executive vice-president.



Site of first Mennen plant, High Street, Newark, 1894. Gerhard Mennen originally started business in small drug store on Central Ave., but moved here when Borated Toilet Powder forced expansion.

Mennen's new plant, Morristown, N. J., covering 264,000 square feet on 100 acres. Manufacturing and packaging areas total 55,000 square feet. For first time, all facilities are in one building.



The Mennen Company is this month celebrating one of the most important events in its 74-year history—the official opening of its new headquarters at East Hanover Ave., Morristown, N. J. A fine tribute to the founder, Gerhard Mennen, this modern plant, which occupies more than 264,000 square feet, directs the sales of Mennen products (for men and babies) in 65 countries throughout the world.

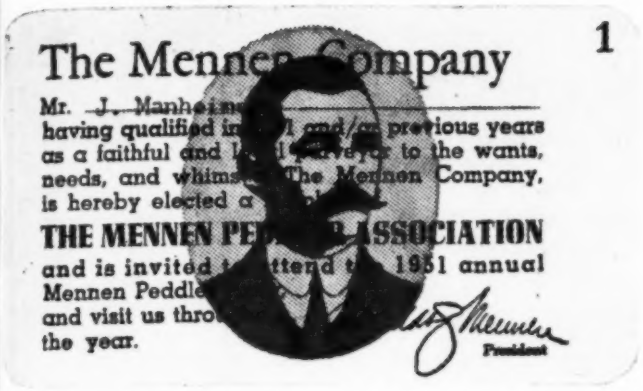
It is the pace-setter of three subsidiary plants in Cuba, Canada and South Africa, and of at least eight independent plants in other countries, which serve as agents to Mennen, and manufacture the products either on a royalty or a commission basis.

William G. Mennen, president, and son of the founder, along with vice-presidents William G. Mennen, Jr., and George S. Mennen, the third generation, through their able leadership and foresight, have helped the Mennen Company attain its present world status.

But that's only a start; the company must keep forging ahead. This latest move, to Morristown, will enable Mennen to handle its present business with the newest and most efficient equipment, and keep an eye out for greater things to come.

The manufacturing area of the plant, based on the gravity-feed principle, is located on the second floor of the two-story building. The mixing tanks and kettles are divided into three sections, one for liquids, another for creams, and the third, for powders. In each case, the kettles are grouped together in small numbers, and each group is controlled from a single panel of switches, dials and temperature graphs, so that one or two men can supervise each operational unit.

To promote the greatest safety possible, such harsh liquids as potash are piped into the mixing tanks directly from a storage-tank farm either within the plant, or underground, away from the plant. All the concrete floors slope gently toward the continuous drains around the periphery of the operating areas. In the Alcohol Room, the windows are latched with a particular type of lock which unfastens, even with a slight tap of the hand, so that, in case of an explosion, they will open,



Jake Manheimer, president of J. Manheimer, each year receives the No. 1 Peddler Card in honor of his long friendship with the Mennen Company, dating back to Gerhard Mennen.

and the pressure will be dissipated outside the plant.

On the ground floor, the ten production lines are arranged side by side, each in the shape of a capital "U". The most unique feature of this arrangement is that the two ends of each "U" poke through little window-sized apertures in the packaging room wall, right into the warehouse itself. The upright portions and round base of each "U" are situated in the packaging room.

While one end of each "U" is the feed end where the empty containers and their caps are placed on the conveyor belt, to pass through the first aperture, the other extremity of each "U", which returns through the second aperture, only about ten feet away, is the loading portion, where the Mennen products arrive fully packaged and ready for distribution, either to be stored in the warehouse, or to be palleted to the near-by conveyor lines. These conveyor lines travel through the warehouse and terminate at the loading platforms where trailer trucks are waiting. A dispatcher, seated at a special table in the center of the warehouse, with a microphone at hand, is able to direct loading orders to any section of the storage area. Men working the pallet trucks and feeding these conveyor lines can therefore carry out the dispatcher's orders the minute they are received.

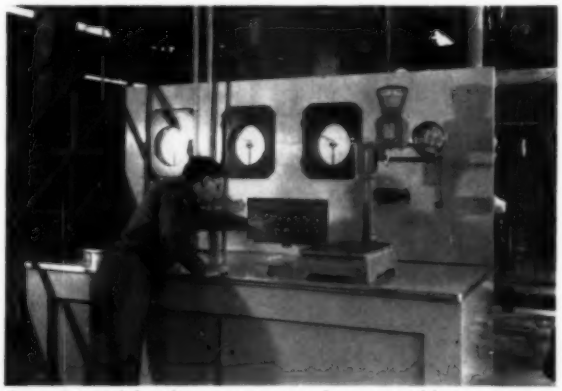
By this arrangement, the spick-and-span packaging room is always free of pallet trucks and is completely devoted to filling and packaging. It is a bright room with walls of different solid colors, for visual relaxation, and a fully lighted ceiling which affords the greatest illumination possible, without glare, without shadow. As a safety precaution, all the production-line operators work on the outer rim of each "U".

Speeds of the packaging lines range from a high of 150 filled and capped containers per minute to 90 per minute for the smaller containers. Two lines can provide as many as 100,000 units a day.

Here is the nerve center of the plant. Here the finished powders, liquids and creams are delivered to be packaged and sent on their way to the far countries of the world.

(Continued on page 697)

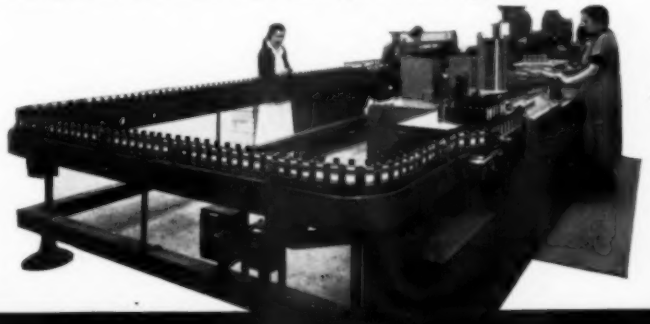
Retail Sample Room containing quality control samples, from raw materials to finished products, of coded batches of all products made by Mennen plant as well as foreign branches. Samples must be stored for two-year period.



Control panel for shave cream manufacture enables one or two men to govern operation of Mennen Menthol-Iced Shave Cream, Lather and Brushless Shave Creams all at once. Circular graphs indicate temperatures in steam-jacketed Lee Kettles.

Power-driven shipping line in warehouse amid finished-good storage area. Dispatcher, at table, announces shipping orders by loudspeaker to stock men who feed line. Conveyors carry products to trucks at loading bays.

"U"-shaped packaging line, Mennen Skin Bracer, is similar to all other packaging lines in plant. Operations begins and ends in warehouse, with line piercing wall separating warehouse and packaging room. Finished product is carried to storage area in warehouse by fork truck. No trucks appear in packaging room.



Silicones in Medicine and Pharmacy

COURTESY E. R. SQUIBB & SONS

By Milton A. Lesser

It has been said that the silicones provide food for the imagination. Since their introduction into industry about a decade ago, the potential applications of these compounds appear to be unlimited. As technologists become aware of the unusual properties of the silicones, more and more applications—some of them quite spectacular—are being found for these compounds. During the last few years, their versatility has extended to the pharmaceutical and medical fields, where the silicones have proved capable of improving a variety of products and of facilitating many technical and clinical procedures.

Silicones form a new and important branch of chemistry.[1,2] Although the study of organo-silicone compounds goes back to the work of Berzelius in 1823, the foundation of modern silicone chemistry was laid by F. S. Kipping at the University of Nottingham in England during the years 1899 to 1944. Indeed it was Kipping who coined the term "silicone," which has now come to refer to any of the organo-silicone products based on a silicon-oxygen structure.

As explained by McGregor,[3] a leader in the field of silicone research, the silicones are synthetic polymers, but there are two distinctive features that make them different from other polymers. First, the basic structure of the molecule is not carbon, as in the usual type of synthetic polymer, but an alternate chain of silicon and oxygen atoms (e.g.—O-Si-O-Si-O-Si). Each silicon atom has one or more organic groups, generally a methyl or phenyl group, attached to it. Second, depending on the number and type of organic groups attached to the silicon and the method of polymerization, the final material may be a liquid, resin or rubber.

This unique chemical structure is responsible for the unusual combination of properties characteristic of the silicone polymers. They are semi-inorganic materials and possess much of the stability and good dielectric properties associated with glass, quartz, and mineral silicates to which they are chemically related. On the other hand, they acquire flexibility, variability, ease of handling and water-repellency from certain organic materials to which they are also related.[4] Thus, as a class, the silicones are notable for the fact that they are water-repellent, stable at high and low temperatures, chemically and physiologically inert, and possess excellent dielectric properties.

The silicone fluids, which are the types most commonly used in medicine and pharmacy, consist of linear polymers of dimethyl siloxane. They are clear, sparkling, oily liquids that are odorless, tasteless, insoluble in water and highly water-repellent. They are highly resistant to change due to heat or oxidation. Their viscosity, which varies but slightly with thermal changes, is dependent on the average polymer chain

COURTESY PARKE DAVIS & COMPANY

length. Silicone fluids that remain true liquids at both high and low temperatures are producible in any viscosity between 0.65 and 1,000,000 centistokes. Solubility varies somewhat with the viscosity. However, commercially available silicone fluids or oils in all viscosities are miscible in all proportions with the following solvents: amyl acetate, benzene, carbon tetrachloride, chloroform, ethylene dichloride, ethyl ether and a number of industrial solvents.[4]

The transparency, stability, low volatility, and high boiling point of the various silicone fluids make them suitable for innumerable industrial and research applications. However, for use in pharmacy and medicine, physiologic properties and toxicologic factors are of major consideration.

Fortunately, the silicone fluids are practically inert physiologically[4] and appear to be essentially non-toxic.[2] Rather extensive toxicologic studies by Rowe, Spencer and Bass[5] have revealed a low toxicity in the laboratory animal. The silicones have shown little or no untoward effects when administered orally in proportions up to two per cent of the body weight, when inhaled in high concentrations, or when applied to the skin. However, certain fluids caused a transitory conjunctival irritation but no corneal damage when applied to the eye. This, it has been said,[6] would eliminate the silicones from use in ophthalmic preparations.

Toxicologic studies specifically designed to determine the advisability of using a silicone in the manufacture of pharmaceuticals were made by Kern, Anderson and Harris.[7] In their work, rats were fed silicone-containing foods, and rabbits and mice were injected with silicone suspensions. The conclusion reached from these studies was that the silicone under investigation has a low order of toxicity.

Studies to determine the suitability of silicones in dermatology have been made by Schoog[8] in Germany. His tests on 93 patients and 63 healthy persons showed that in no instance did silicone cause skin irritation. Such findings, plus the fact that the silicones possess chemical inertness, adhesiveness, and the ability to repel moisture on topical application, indicate strongly that silicones will have a valued place in the prophylaxis and treatment of dermatologic conditions.

These characteristics were taken into consideration when Talbot and his colleagues[9] sought to develop a preparation that would afford protection to the skin against the consequences of constant moisture. The product which they developed, called Silicate, consists of 30 per cent silicone fluid (Dow-Corning 200 centistoke viscosity) in a petrolatum base. It is applied to macerated non-weeping areas in a thin coat, and is not removed before applying a new film in four to eight hours. It is not advisable to remove the ointment. As a matter of fact, several scrubbings with soap and water are required to remove the visible protective action of the preparation. Moreover, such solvents as ether, alcohol, benzene and acetone have no effect clinically on its protective action.

These dermatologists found that their silicone ointment was effective in the management of 58 out of 61 conditions like diaper rash, irritation from colostomies, intertrigo, decabitus ulcers, and other dermatologic disorders in which protection from moisture was indicated. Most of these cases had failed to respond to currently acceptable and recommended forms of therapy.

More recently, another type of silicone skin protective has been made available. Called Covicone cream, it is described by the manufacturer as a special plasticized combination of silicone, nitrocellulose and castor oil in a vanishing cream base. This greaseless preparation is said to provide long-lasting skin protection in contact dermatoses and allied conditions. It may also be found useful for protection against poison ivy and related plants. The cream is likewise recommended for the management of inflammations caused

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COURTESY THE KENDALL COMPANY

The French Lavandin

by Ernest Guenther, Ph. D.

VICE PRESIDENT AND TECHNICAL DIRECTOR
FRITZSCHE BROTHERS, INC., NEW YORK

A lavender plantation (Lavandula officinalis) near Lambruisse (Basses-Alpes), Southern France.

Top of an Eysseric still serving for the distillation of lavender and lavandin in Southern France.

Lavandin harvest near St. Jurs (Basses-Alpes), France.

In Volume III of his series "The Essential Oils" the author has attempted to give a detailed account of oils of lavender and lavandin in all their phases. Although these monographs were completed at the beginning of 1949 the data they contain essentially still hold true. In the summer of 1952 the author was able to undertake a new field survey of the lavender and lavandin industry in Southern France. On this occasion he noted a number of recent developments which will be described in what follows.

To recapitulate briefly, there are three plant species of the genus *Larandula* (family *Labiatae*), from which three closely allied and commercially important essential oils are obtained.

1) *Lavandula latifolia* Vill., the so-called spike or spike lavender plant, which grows wild in the lower altitudes of Southern France, Spain, and other Mediterranean countries. The commercial oil originates almost exclusively from Spain, where wild-growing plant material is distilled in simple field stills. In 1952 Spain produced about 125,000 kilograms. Spike lavender oil contains only two to three per cent of esters (calculated as linalyl acetate) and exhibits a rather harsh, camphoraceous odor; hence serves chiefly for the scenting of soaps and technical preparations.

2) *Lavandula officinalis* Chaix, the true lavender, which grows wild in the higher altitudes (from about 700 to 1,100 meters) of Southern France, and is also cultivated there. The commercial oil originates almost exclusively from France which produces on the average 50,000 kilograms per year. Of the three commercial oils derived from the *Larandula* species this is the finest oil, exhibiting the sweet, refreshing and delightful fragrance of the true lavender plant. The quality and ester content usually increase with the altitude at which the plants grow, and depend also upon the

Lavender and Industry Today

method of distillation. The ester content of most oil lots varies between 38 and 42 per cent, but may be as high as 55 per cent in oils of best quality.

3) *Lavandula hybrida* Reverchon, the so-called lavandin, also classified as *Lavandula officinalis* Chaix X *Lavandula latifolia* Vill., is a hybrid of true lavender and spike lavender. It is cultivated on large plantations in the south of France at altitudes ranging from 300 to 900 meters. Since lavandin is a much hardier plant, easier to cultivate, and yields much more oil per acre than lavender, many producers in France have recently switched from lavender to lavandin. Yearly production of the latter oil in France now averages about 300,000 kilograms. The ester content ranges from 15 to 32 per cent (which is between that of spike and that of lavender oil). The odor too proves the hybrid character of the lavandin plant; it combines the fragrance of lavender with the camphoraceous harshness of spike. Lavandin oil is attaining ever increasing importance in the scenting of soaps.

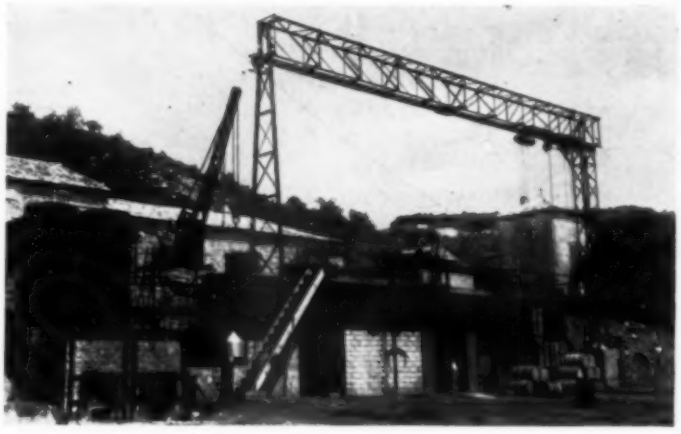
Since there have been practically no changes in the production of spike lavender oil in Spain the following will deal only with the recent developments in the French lavender and lavandin oil industry.

Oil of Lavender

Until about 1905 practically all French lavender oil was produced from wild-growing plants in rather primitive movable field stills distributed throughout the producing regions and set up in places where sufficient supplies of the wild-growing plants were available. The method of distillation practiced at that time (boiling of the flowering stalks immersed in water) resulted in considerable hydrolysis of linalyl acetate, principal constituent of the oil. In 1905 Schimmel & Co. erected the first modern steam distillery in Barreme (Basses-Alpes), and proved by the use of direct steam (avoiding contact of the plants with boiling water) distillation could be shortened considerably and hydrolysis of the esters reduced substantially. With their modern steam stills Schimmel & Co. were able to produce oils with an ester content as high as 55 per cent. Other

(*Continued on page 692*)

Distillation of lavandin plants in a large distillery near St. Jurs (Basses-Alpes), France.



View of a large lavandin distillery near St. Jurs (Basses-Alpes).

Charging of a large still with flowering lavandin plants near St. Jurs (Basses-Alpes), France.

COURTESY RKO PICTURES INC.

Liquefying Creams

by Harry Hilfer

Liquefying creams in one form or another have been part of cosmetic lines ever since their use began. In tracing their development during the past 30 years the changes in their structure have been markedly affected by the introduction of new and synthetic substances, so that the present products of this type have little resemblance to their older predecessors.

As originally conceived, liquefying creams were mixtures of oils and waxes containing little or no water, which possessed marked thixotropic properties—so that on application and more gentle pressure, the salve-like preparation would appear to liquefy on the skin. The film so formed could serve as a lubricant, massaging medium or as a means of removing superficial soil with the help of cleansing tissues. It is possible to formulate preparations of this type so that the apparent melting point is considerably higher than body temperature and still have it behave properly on application—by the proper use of waxes.

High melting paraffin waxes were the most generally used since these were easily miscible with mineral oils and introduced in conjunction with them a marked thixotropy. Spermaceti was another substance which behaved in a similar fashion. Both these waxes have

relatively low melting points and are easily liquefied with pressure.

The characteristics of the film could further be enhanced by the introduction of lanolin or ozokerite or beeswax. Ozokerite and beeswax served to add additional body to the film, if this was desired, and they further prevented a bleeding of the oils to the surface. Lanolin also helped to prevent this defect. The creams, of necessity, had to be poured at a temperature considerably higher than room temperature so that they could set properly on cooling.

There are few liquefying creams of this type on the market now, their use having been largely superseded by emulsions which perform the desired functions more satisfactorily. However, the idea of the liquefying cream has been adapted for use in certain types of make-up preparations and some anhydrous creams. A good example of this is the make-up base—a pigmented cream consisting of mineral oil, a low molecular weight monohydric alcohol esterified with either stearic or myristic acid—and usually carnauba wax as the agency to introduce the desired thixotropic effect. This preparation also has to be poured warm. Another example would be certain of the hormone creams. These creams in many cases contain no water and are dependent on a thixotropic property so that they will not flow in the container.

The major departure from the old liquefying creams, however, consists in the use of small amounts of water in conjunction with an emulsifying agent to introduce the desired effect. This is done not only in a cream form but also in a liquid. The mechanism here consists of the addition of water as a clouding agency which after application, or during application, evaporates to an extent sufficient to cause the film to appear clear and not milky. The addition of the water serves further to stiffen the cream to a desired consistency, due to the regular effects of a dispersed phase in an emulsion. The gradual evaporation on application would therefore also cause a lowering in the viscosity of the film.

Creams of this type may be modifications of the cold cream formulas when water is kept at a level of about 20%. A successful procedure is a combination of a beeswax—borax cream with an absorption base cream-where the dispersed aqueous phase is also kept at a low level. Absorption base creams by themselves containing relatively large amounts of oils and smaller amounts of water may also be used.

The greater portion of these preparations, however, take advantage of the synthetic emulsifiers now available. There are a large number of these, particularly the nonionic substances where the ratio of hydrophylic and lipophilic groups in a single molecule may be controlled to give any desired effect. These substances, mostly of the sorbitol esters and ethers, have excellent emulsifying properties and are available in forms which are conducive to water-in-oil, as well as oil-in-water formulations. Most of the liquefying creams use polyol esters as a base, but utilize absorption bases and other emulsifiers to obtain the characteristics sought after. In formulations of this type as well as others, a choice of raw materials would be dependent on the final effects desired. If the primary effect wanted is a cleansing activity, mineral oil is perhaps the best choice of an oil, since it is not readily absorbed by the skin surface and it may be easily removed with cleansing tissues. If a thinner film is desired however, substances such as isopropyl myristate are better. However, mineral oil generally is easier to emulsify than is the isopropyl myristate. Mixtures of the two are easier to work with.

The use of waxes in these preparations although not as important as in the previous types, serve to help the consistency requirements of the finished product. Beeswax, spermaceti, cetyl alcohol and paraffin waxes are in general use. Lanolin, which in the public mind is synonymous with skin care, is also used.

The amount of water used is dependent on the viscosity desired. Large amounts of water, everything else being equal, would cause the cream consistency to be thicker. However, increasing the amount of the emulsifier would soften the cream so a control can be maintained in this fashion. Too low an aqueous concentration, however, may cause the cream to be somewhat translucent in appearance, rather than opaque. The addition of the waxes would tend to offset this deficiency as well as to increase the viscosity of the preparations.

The difference between a cream and lotion of this type would therefore be dependent on the ratio of water to emulsifier and secondly on the concentration of waxes used. Actually the same rules and techniques could be applied to both types.

The manufacturing procedure best followed, but by no means universal, would be to introduce water at 70°C. to the lipoid and emulsifier faction also at 70°C, with stirring. Water-in-oil emulsions generally respond well to homogenization. This may be accomplished by passing through a roller mill or colloid mill perhaps 10°C. above the setting temperature or by using a homo mixer, where mixing and homogenization are simultaneous—in a single motion. These products are best packed cold.

The use of these types of creams and lotions are not limited to the care of the skin. The same type of formulation may be used as a means of making hair dressings, since here again it is desirable for the emulsion to become clear as soon as possible after application, and where a relatively large amount of oil is desired.

Water-in-oil emulsions are not as satisfactory generally as are oil-in-water preparations, since the latter are usually capable of greater stability. In this particular case, however, I do not think that a substitution could easily be made.

Hexachlorophene in Cosmetics

*by Dr. William S. Gump**

While there exists a large amount of literature[1] on the skin-degerming efficacy of soaps and detergents containing hexachlorophene (G-11**) only a few papers have been published dealing with other vehicles, such as lotions and creams, which, besides their pharmaceutical usefulness, are important as cosmetic bases.

Spoor and Traub[2] reported on tests which were run under controlled use conditions with a lotion consisting of an aqueous mineral oil emulsion, with a fatty base deodorant cream and aqueous and alcoholic vegetable oil hair dressing preparations. The exact composition of these products was not stated. Spoor and Traub found that these oily preparations containing hexachlorophene, while superior to the controls without an antiseptic, were less effective in reducing the cutaneous bacterial flora than hexachlorophene soaps. They give the preferential solubility of hexachlorophene in oils as a possible explanation for this difference. An effective contact of the hexachlorophene with the bacteria on the skin might thus be prevented.

Glaser, Thompson and Benson[3] studied the effectiveness of two types of lotions containing hexachlorphene, supplied by Johnson and Johnson, in the prevention of skin infections of infants, mostly newborn. The lotions consisted of emulsions of liquid petrolatum and hydrous wool fat in water to which one per cent hexachlorophene had been added; one lotion was kept slightly acidic, the other at a slightly alkaline pH. While these investigators did not determine the decrease of the bacterial population of the skin, they found that these lotions, especially the alkaline one, were highly effective in controlling the incidence of impetigo, malaria and diaper rash in infants.

In their study on the resistance of cutaneous bacteria to hexachlorophene, Grubb and Wands[4] used a cosmetic-type lotion containing hexachlorophene which was applied three times a day to the hands of eight subjects. A similar group used the lotion without the

*Research Associate, Givaudan-Delwanna, Inc.
**Trademark, Givaudan-Delawanna, Inc.

antiseptic. During the seven weeks' test period, there was a 75 per cent reduction in the bacterial counts of the hands. At the same time, it was found that a pure culture of micrococci isolated at the beginning and at the end of the experiment did not become resistant to the bacteriostatic action of hexachlorophene during the seven weeks of daily application of the lotion.

Gregg and Zopf[5] investigated the usefulness of hexachlorophene in ointments, incorporating it to the amount of one per cent into four bases which are official in U.S.P. XIV. These bases were hydrophilic ointment, hydrophilic petrolatum, white ointment and polyethylene glycol ointment. The F.D.A. agar cup-plate method proved unsuitable for the polyethylene glycol preparation because it is soluble in the medium, but demonstrated the bacteriostatic effects of the other three ointments, a zone of 4.5 to 5.5 mm. being produced. Gregg and Zopf believe that hexachlorophene will be "adaptable to lotions, ointments and antiseptic oils."

While the studies mentioned deal with the antibacterial and therapeutic effects of cosmetic-type preparations containing hexachlorophene, nothing about the deodorant action of such products has been reported. For the general public, the elimination of body odor is of greater significance than the reduction of the skin flora which cannot be detected by the human senses.

In order to get some information in this regard, we decided to evaluate the comparative skin degerming and deodorant efficiencies of two toilet preparations, selecting a body powder containing 0.5 per cent hexachlorophene and a deodorant stick with 0.25 per cent hexachlorophene. The same preparations without hexachlorophene were used as controls. None of the preparations contained perfume.

The powder consisted of the usual cosmetic grade of talcum. The sticks were prepared in accordance with the following formula:

	Parts by weight
Stearic Acid	4.5
Propylene Glycol	3.0
Alcohol D.S. 40	84.0
Caustic Soda	0.75
Water	7.75

Experimental Method

The subjects for the tests* were five women whose ages varied from 33 to 60 years. The same five subjects were used for testing each of the four preparations (two with hexachlorophene and two controls). Upon completion of the test on each preparation, the subjects "rested" for one week to permit the recovery of the cutaneous flora to normal levels.

Each test period extended over eight consecutive days, i.e. from Monday to Monday inclusive. For three days prior to the test and throughout the test period, the subjects refrained from the use of any antiperspirant, deodorant or cleansing agent in their axillary fossae.

Two techniques were used for measuring the performance of the test products. Periodically, the odor of samples of perspiration taken from the axillary fossae of each subject was determined; direct cultures of the cutaneous bacteria of the axillary fossae were made to establish the percentage reduction of the bacterial flora.

The perspiration samples for odor determinations were obtained by subjecting each individual to a sweating test. Each sweating extended over one hour during which the subjects were maintained in a "hot" room at temperatures ranging from 102-104° F. Samples of perspiration were collected on absorption pads maintained in the subjects' axillas. At the end of a sweating period, the absorbent pad was removed from the axilla and placed in a bottle containing 25 ml. of water. The samples were diluted uniformly with nonodorous water and incubated at 37° C. for 24 hours. The intensities of odors were determined by the air-dilution method by means of the twin-sphere osmometer as described by Fair[6] and adapted to analyses of samples of perspiration by Killian and Panzarella[7]. Results are expressed in dilution numbers, showing how many times a definite volume of non-odorous air drawn through the sample of perspiration and becoming saturated with the volatile, odorous compounds must be diluted with equal volumes of atmospheric air until its odor becomes imperceptible. E.g., if the initial volume of air drawn through the perspiration is 100 ml., a dilution number of 16 means that this volume must be diluted with 16 x 100 ml. of fresh air until its odor is diminished below the threshold of olfaction. It is evident that a high dilution number corresponds to a strong odor of the perspiration sample.

The dilution numbers of fresh perspiration usually range between zero and two, rarely going up to four. After incubation, if no antiseptic is used on the skin, the odor values rise to eight or 16, sometimes even to 32. Samples of perspiration exhibiting an odor intensity of eight are invariably objectionable or offensive; samples giving a value of 16 or more are definitely putrid and distinctly offensive.

The sweating tests were conducted on the first, third, fifth and eighth days of the test period. On the first and third days two sweating tests were run, one in the morning and one in the afternoon. Only one sweating in the afternoon was run on the fifth day; on the eighth, only a morning sweating was run. The first sweating on the first day was made prior to application of the test products to the axillas.

Direct cultures of cutaneous bacteria were made from the axillas at the end of each sweating test, following the procedure of Pillsbury and Nichols[8]. The bacteria were sampled from three areas within an axillary fossa by means of cylinders covering an area of 13 mm. and containing 2 ml. of physiological salt solution. One ml. of the saline was aspirated and these aliquots were pooled to yield composite samples. Serial dilutions

(Continued on page 713)

*The study was conducted by Killian Research Laboratories, New York 36, New York.

Donald Gilmore, reelected president of A.D.M.A.

A.D.M.A. Meeting

"In terms of existence, ours is an old industry. Measured in terms of our development of specific drugs to combat disease and physical decline, we are only coming of age," said Donald S. Gilmore, president of the American Drug Manufacturers' Association, in his address to the 41st annual meeting held at Boca Raton, Fla., April 13-16.

For the first thirty-five years of the present century the progress was slow with the development of some new potent drugs including Adrenaline, Salvarsan, Barbital, and Insulin, said Mr. Gilmore. Pearl Harbor Day was also sulfanilimide day to the doctors and drug manufacturers, he said, as the startling effectiveness of this drug was demonstrated by the mass application following this sneak attack. At about the same time the British scientists came to this country to request that large scale production of penicillin be undertaken but it was not until May 15, 1945 that unallocated distribution of penicillin could be made available.

Following sulfanilimide came new sulfa compounds, pyridine, diazine, Suxidine, merazine, methazine, Cetamide, thiazole, and Thalidine. Antibiotics following penicillin are Aureomycin, Chloromycetin, Terramycin, streptomycin, neomycin, bacitracin, polymixin, and erythromycin, he added.

In barbiturates, Mr. Gilmore said to mark down Seconal and Nembutal as but two, of many, of the fine improvements available. For pain killing relief, Demoral has marked a great advance. To Atabrine for malaria, has been added chloraquine. New agents for motion sickness include Dramamine.

Add blood plasma and blood substitutes to your list of new medicinal agents, said Mr. Gilmore, who added heparin and Dicumarol for relief of blood clotting, and Pentothal Sodium as one of the new anesthetics.

In the field of nutrition, nearly all of the now identified components of the vitamin B complex have been isolated since 1935. Riboflavin, niacin, pyridoxine, calcium pantothenate, folic acid and vitamin B_{12} have been developed for therapeutic and nutritional use. Ascorbic acid has been synthesized, and now most of the vitamins A and D comes from synthetic sources, said Mr. Gilmore.

To streptomycin for tuberculosis have been added PAS and isoniazid, continued Mr. Gilmore. For sufferers from hay fever and asthma has been developed a long list of drugs starting with Nrnadryl and then Pyribenzamine, and later scores of chemical compounds with the specific action of suppressing histamine. Then came the steroid hormones, ACTH, cortisone, hydrocortisone, Doca and corticosterone. Drugs such as Banthine have greatly assisted the physician in treatment of ulcer patients.

"With this increasing success in the development of new drugs," said Mr. Gilmore, "has come an equally increasing interest on the part of the public for more and more information regarding them and regarding

health problems generally. . . .

"Obviously, one of our most important problems of the moment is how best to handle the news of drug and other scientific discovery. It must be handled so that the professional and lay public will be kept fully informed. It must at the same time be handled so that we do not give rise to false hopes in the minds of the people. We must not furnish the basis for premature or incorrect judgment as to the possibilities ahead for the treatment of the various diseases. Such a task is not impossible.

"Defined then in its broadest terms, our most immediate problem is how and under what circumstances should we communicate with the general public.

"The progress and success of science is founded upon the earliest and most complete publication of all scientific discoveries. Since today our members operate some of the largest and most productive research facilities in the health field, we find it necessary to publish the results of this research as early and as fully as is reasonably possible. This information must be made available in the scientific literature so that research workers throughout the world can benefit from the past experience of others in pressing forward to newer and greater discoveries. . . .

"Some estimates have placed the per cent of sales spent on research by our industry at three times the percentage spent by industry as a whole. More than half of the medical research that is being conducted in the United States is being financed by our industry according to reports in Scientific American.

"If then we agree that it is inevitable that news of drug discovery is going to be published, isn't it necessary for us to try to develop better means of communication to science writers? Shouldn't we be certain that they have every piece of useful information on these new medicinal agents so that they can tell the story of their development factually and in a manner to further the interest of better health?"

Scientific Manpower

Dr. Karl Bambach, executive vice-president of the ADMA, among other things, reviewed the outlook in scientific manpower.

"In the field of the natural sciences," said Dr. Bambach, "there are at present in the United States about 46,000 individuals with the Ph.D. degree. This is equivalent to only about one person in every 40,000 of the general population. I need hardly mention that the proportion of employees with the Ph.D. degree in our membership exceeds this one-in-40,000 ratio by many, many times.

"In 1940 there were about 180,000 students graduating from college; in 1950, the peak year, there were more than twice as many: 434,000. However, in 1952 the number graduating dropped to 325,000, and it is estimated that the quantity will continue to decrease until about 1955, when only 270,000 will graduate. This is just a little over one-half the number in the peak year of 1950.

"The same situation exists in the chemical field. According to the American Chemical Society, there were 7,700 graduates in chemistry with the bachelor's degree in 1948; the number rose to 10,800 in 1950, and will probably drop to 5,000 in 1955. Here again, we expect to have only one-half as many students graduating in chemistry in 1955 as there were in 1950.

"After 1955 there will probably be an increase in the number of college graduates resulting from the higher birth rate during World War II. We may expect a similar trend in the case of graduates with advanced degrees, except that the changes in the curve will occur a year or two later.

"Now, this situation has highly significant implications for all industry, and particularly for the pharmaceutical industry, which lives and grows on science. I have observed that many member firms have found it quite difficult to hire all the chemists and other scientists they need. If difficulty was experienced in 1950, with more than 10,000 chemists graduating from college, I hesitate to say what we shall find in 1955, with only about one-half as many becoming available.

"Of course, general business conditions may change the demand somewhat, but it would seem unlikely that the picture of scarcity in the applied sciences will be modified materially. The trend in industry is to use more and more scientists."

To increase the supply of intellectual workers during the coming years of scarcity, Dr. Bambach recommended that:

1. Methods of sending a maximum number of talented young people through college should be developed. The American Foundation for Pharmaceutical Education, and the other educational foundations in the scientific fields, are of the most immediate interest and concern to this industry.

2. The best possible use should be made of trained specialists which the industry now has. Of the business executives, scientists, engineers, writers, specialists in promotion, distribution, and all other technical fields, it will become more and more desirable to use these specially talented people properly.

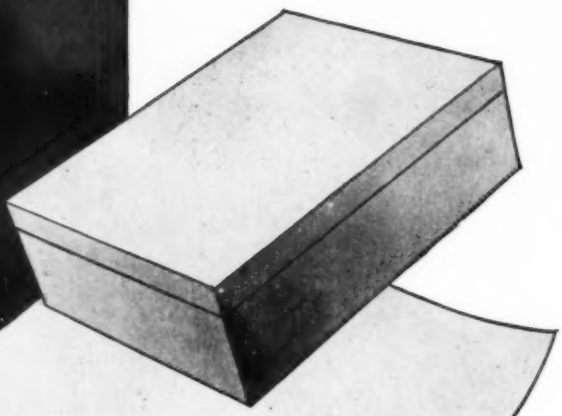
3. It is advisable to help employees with the necessary ability to improve themselves and their performance. Some companies have found that it pays to encourage attendance at night schools or make part-time academic arrangements. Classes in all kinds of subjects are conducted for employees by some firms. People with aptitude and intense interest can often become valuable technical specialists with very little formal training.

Legal Problems

Reporting on activities of the Legal Section, General Counsel Leslie D. Harrop said, "During the past our activities have had a wide range. We have dealt extensively in a field where our approach could decently be termed that touched with industrial altruism. There have been other times when our interests were quite

(*Continued on page 700*)

Why use a BOX



when a SHEET OF PAPER will serve you better?

Leading manufacturers bundle on "PACKAGE" MACHINES

You may be surprised at how well a machine-made bundle will serve your product. And you'll probably be amazed when you learn how much it saves over the cost of using cardboard boxes.

You can see right off that material costs go down — for a single roll of paper will produce hundreds of bundles. Since the machine automatically assembles the cartons directly from the conveyor line, there's also a large saving in labor — no hands required for packing into boxes. Shipping costs go down too, and storage space now taken up by boxes can be put to more productive use.

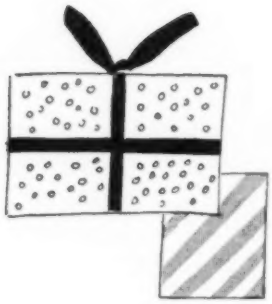
CONSULT THE ORIGINATORS OF MACHINE BUNDLING

The Package Machinery Company originated machine bundling, and can offer you the widest experience in this development. A study of your requirements will enable us to suggest a machine set-up exactly suited to your production needs.

Write or phone our nearest office

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS

NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO SEATTLE TORONTO MEXICO, D.F.



Packaging and Selling

ADVERTISING ON TRIAL?

Something is happening to advertising in America. It may well be that dynamic changes in advertising are forming which may radically change our whole method of selling by communication whether by print, radio or television or any of the other numerous methods of communication used to reach the American public.

It is very evident that a smaller number of people each year believe in anything that is said in advertising or have any confidence in it. Advertisers, through their investigations, are discovering a decreasing number of people who read advertising or pay any attention to it, and an increasing number who openly disbelieve anything that is said in advertising.

There is a strong growing restlessness among many advertisers resulting from a feeling that they are either not getting their dollar's worth for the amount of money they are spending, or a strong unhappiness based upon the fact that they are caught in a complete trap. That is, their advertising is not producing enough business to pay for the investment and yet because of retail relations, they do not dare discontinue or cut down on advertising.

In a survey made in this industry by the magazine, Beauty Fashion, last year, in answer to the question as to whether the manufacturers believed that advertising was producing sales in proportion to the investment, 84 per cent stated an emphatic No.

A recent study made by The Pulse, Inc. among 13,000 consumers in home interviews came up with the following conclusions:

1. National advertising that receives as much as 50 per cent belief is doing well.
2. There is very little variation between high, medium and low income families in the predominant suspicion that advertising "is just advertising talk."
3. Families in high income circles have an amused boredom over unbelievable advertising. Low income families tend to become bitter.

Cigarette advertising has come into adverse criticism from many quarters lately, particularly as achieving the lowest degree of believability. The cigarette people, on the other hand, are still entitled to state that a few leading brands stand out over the rest and have continued to maintain a consumer habit for their brand products. But if cigarette advertising is either not believed or to a large extent not even noticed, it seems possible that this market is wide open for any company in the tobacco business that can come up with a believable selling statement.

Probably the field in which believability has been most abused, where the most flagrant, false and misleading advertising to an almost unscrupulous degree has flourished, is in the garden supply field. Among the media the worst offender has been the garden section of the leading reputable newspapers. These newspapers have accepted, during the last few years, flamboyant copy from a long series of so-called miracle products which their garden editors most certainly have known were in many cases outrageous phonies. It would hardly be surprising if most gardeners began to view anything new or improved in this field with the deepest degree of cynical disbelief.

Advertisers are beginning to scream about what they call brand disloyalty and even advertisers who have spent for many years a million or more dollars a year on their brand are discovering that the customer will not go two feet out of her way at a retail store to reach up or down for any particular brand, but will easily accept any one of a half dozen competing brands that are more convenient to their hand.

The so called editorial type of advertising which is now agitating many advertising agencies and such publishers as Curtis Publishing, Harper-Atlantic and others is a sign of the effort to break away from the failure of advertising to keep up with its dollar productiveness over the last several years.

Scovill Buttons

A beautiful example of the graphic arts, the book just published by Scovill Manufacturing Company, called "The Mill on Mad River," is worth a place in any man's library. This book contains a reproduction of the series of advertisements which was run in celebration of the 150th Anniversary of Scovill.

These advertisements dealt with some of the many famous buttons produced by Scovill during these 150 years and in each of these scenes is reproduced in beautiful printing an important incident of American history.

1953 Paper Box Competition

First, Second and Honorable Mention awards, consisting of framed scrolls, in the Annual Set-Up Paper Box Competition, were presented to winning paper box manufacturers and their customers at the 35th annual meeting of the National Paper Box Manufacturers Association, May 17-20, at the Sheraton-Plaza Hotel in Boston. The boxes were judged in March at the Association's Competition headquarters in Philadelphia. Twenty-two End-Use classifications were judged, in addition to Best Surface Design and Execution, Superiority of Construction, Best Display Box and Best Transparent Box. The End-Use entries were judged on the general functions of the set-up box—the ability of the box to protect the product, appropriateness of the package, display value, brand identification, convenience in packaging and inspection by customer, and sales appeal.

Carousel Set—Beauty Counselors

Norma Chrome—Hydrol Chemical Co.

Lipbrush—Elizabeth Arden

Ascorbic Acid—Merck & Co.

Midnight Perfume—Lehn & Fink

Gift Set—Beauty Counselors

Pharmaceutical Mailer—Schering

Of the 56 awards presented, 9 were won by members of the drug and cosmetic industries, as follows:

First Awards: Two were presented to Newark Paper Box Co., on behalf of Lehn & Fink Products, Inc., for Midnight Perfume Ensemble—one for General Superiority According to End Use, and the other, for the Best Transparent Box.

Second Awards: One each to Walter P. Miller Co., Inc. for Merck & Co. (Ascorbic Acid Sample), and to Stecker Paper Box Co. for Beauty Counselors, Inc. (Beauty Counselor Gift Set)—for General Superiority According to End Use. Another was presented by Walter P. Miller Co. for Hydrol Chemical Co. (Norma-Chrome Display) for the Best Display Box. F. N. Burt Co. received a Second Award, also for Beauty Counselors, (Carousel Perfume Set) for the Best Transparent Box.

Honorable Mention: Two were presented to Walter P. Miller Co. on behalf of Hydrol Chemical Co. (Norma-Chrome Display) and Schering, Inc. (Pharmaceutical Mailer), respectively. Newark Paper Box Co. received Honorable Mention for Elizabeth Arden Sales Corp. (Elizabeth Arden Lip Brush). These awards were presented because of the General Superiority of the packages According to End Use.

Among the judges were Mrs. Edythe Belmont, Lever Brothers; Robert S. Dunlop (retired), Dominion Paper Box Co.; Walter (retired), Dennison Manufacturing Co.; John H. Paterson (retired), F. N. Burt Co.; A. Craig Smith, the Gillette Co.; and Martin Ullman, industrial designer.

Grim Battle

According to a survey, the average chain drug store carries approximately 40,000 items in stock. Just how many different trade-marks or brand names this means is not given in the survey. We could probably assume that out of 40,000 different items in stock in a chain store, there would be 8,000 to 10,000 different brand names.

Since these 8,000 to 10,000 brand names really represent that many words, it gives some idea of the continuous intensity of the fight necessary to keep a brand

Sheffield Tubes

Walgreen's choice for plus packaging

As science continues to wrest secrets from nature, firms like Walgreen bring the benefits to millions. In the science of finer packaging, Sheffield welcomes the opportunity to contribute sound design, flawless printing, and collapsible tubes of uniform quality and dependability.

Plan details of your next tube-packaging campaign with the specialized assistance which is yours for the asking from Sheffield Tube.

THE SHEFFIELD TUBE CORPORATION

Home Office—New London, Connecticut
Sales Offices—New York, Chicago, Los Angeles

Service Map

The map above is self-explanatory. No matter where you are, there's an H-A sales office or factory near you to efficiently service your glass container needs and problems.

HAZEL-ATLAS GLASS COMPANY
WHEELING, WEST VIRGINIA

name fixed in the mind of even a small part of the public. This condition becomes vividly evident when we stop to realize that there are very few people who possess a total vocabulary containing that large number of words, or if we stop to think how difficult it is and how long it takes most people to learn an additional language where they would probably have the use of not over 2,500 words.

This survey also reports that management replaces an employee on the average of every five weeks. Apparently, in retail stores today, the sales employees on the average are not around long enough to even memorize a fringe of the number of products they are supposed to sell. For this reason, it would seem that the manufacturer who faces a grim battle to keep his trade-mark name alive in the memory of a percentage of a store clientele, has an equally grim battle within the store to keep the employee aware that his product is there and available as well as worthwhile for sale.

Druggists, Get Going

It has always been a favorite observation of ours in business that the people who made the most money, the quickest and the easiest, were those who were lucky or smart enough to get in front of a trend.

It is not often that a trend becomes generally noticeable until it is just about finished with being a trend. However, today we are certain, and wish to go on record prophesying, that one of the biggest trends ever to hit America is under way and has not gone more than one quarter of the distance it will travel. In fact, it is just beginning to get real momentum.

This trend is dieting and anybody who says that the American public is not getting ready to go hog wild, high, wide and handsome, and all out, in a frenzy of dieting is plain deaf, dumb and blind.

Already the copy department in the agency of leading advertisers in many branches of food, drink and other things are in a complete dither, either in agony of despair trying to think up defensive words, or in an exhilerated enthusiasm laying it on thick because they are sitting pretty calorie wise.

Publications are well aware of this number-one American enthusiasm and are jumping into it with both feet. One leading magazine announced just recently that they received more letters from readers on an article on dieting than anything else they published. Almost every magazine is featuring nutrition and dieting articles. In the last issue of the Ladies' Home Journal the editors have come up with a new feature series by a lady who, within the last year has taken off 165 pounds. In the enthusiasm of her new-found youth, this rejuvenated dame has started in with a series to tell the astounded women of America how simple and easy it is to knock off 165 pounds with hardly any agony of self denying and without the loss of a single friend.

Just to prove that the men can always beat the ladies in any feat of endeavor, the World Telegram is publishing a series of articles by one of their correspondents who formerly weighed over 300 pounds and has eliminated in little over a year 175 pounds. This agile young sprite has started out to tell America how easy and pleasant it is to accomplish this so-called miracle and at the same time continue to be a fascinating, lavish host.

To make sure that the beauty editors are not going to be outdone in this new field of interest, the famous Antoinette Donnelly of the New York Daily News, has just announced to her large and loyal following that she is going to let them in on some of the secrets of dieting.

What all this preamble means is a reiteration of our former statement in our last issue that herein lies the chance, particularly for the retail druggist, to recover lost sales, to thumb his nose at the grocery supermarket and to establish a department which will fortify and strengthen his community professional standing. This is the kind of department that would make a druggist look for a lease right next door to the biggest super market in town, so that this traffic can be handy for his specialized knowledge.

How much better would be a positive act of this sort than the rather pathetic showing being made by pharmacy in the recent hearings on the present minimum wage in retail stores in New York. In this hearing experts representing pharmacy claim that the loss to drug stores in New York State, through toiletries and proprietaries sold by grocery super markets amount to $30,000,000 and for the whole United States $500,000,000. Based upon this loss, these experts representing the retail pharmacy, see bankrupcy if there is an increase in the retail minimum wage of $0.51½. We do not know enough about the drug store to comment on the justice of this minimum wage with any reference to the competition of the supermarket. We just have a feeling that when the supermarket enters an argument there is a negative attitude on the part of many druggists which could indicate to some observers that these pharmacists see little alternative to the future of their business except under some sort of a protective shield which will enable them, in part, to imitate the supermarket.

Erotic Impulses

The social sciences are going to play an increasingly important part in advertising and marketing research. This is clear from the increasing number of articles and speeches by responsible leaders in these industries. As a sign that we are probably right at the point where these social sciences may take American advertising and marketing men by storm and go to absurd lengths, there have been several articles recently urging outright skepticism or pleading for caution and moderation.

It is true that certain advertising and marketing men have been using these sciences and working very closely with them for quiet a considerable number of years.

The social sciences which will be used as selling aids and instruments of the future include psychology, anthropology, sociology, psychiatry, etc.

One of the things that advertising men will have to get use to in employing these sciences will be the experience that a survey costing quite a bit of money will end up with a report by a learned doctor which, reduced to everyday words, will look like a common sense shrewd observation that might be made by the lady who is cleaning up the office.

We like the way Mr. Fred L. Schlinger, director of re-

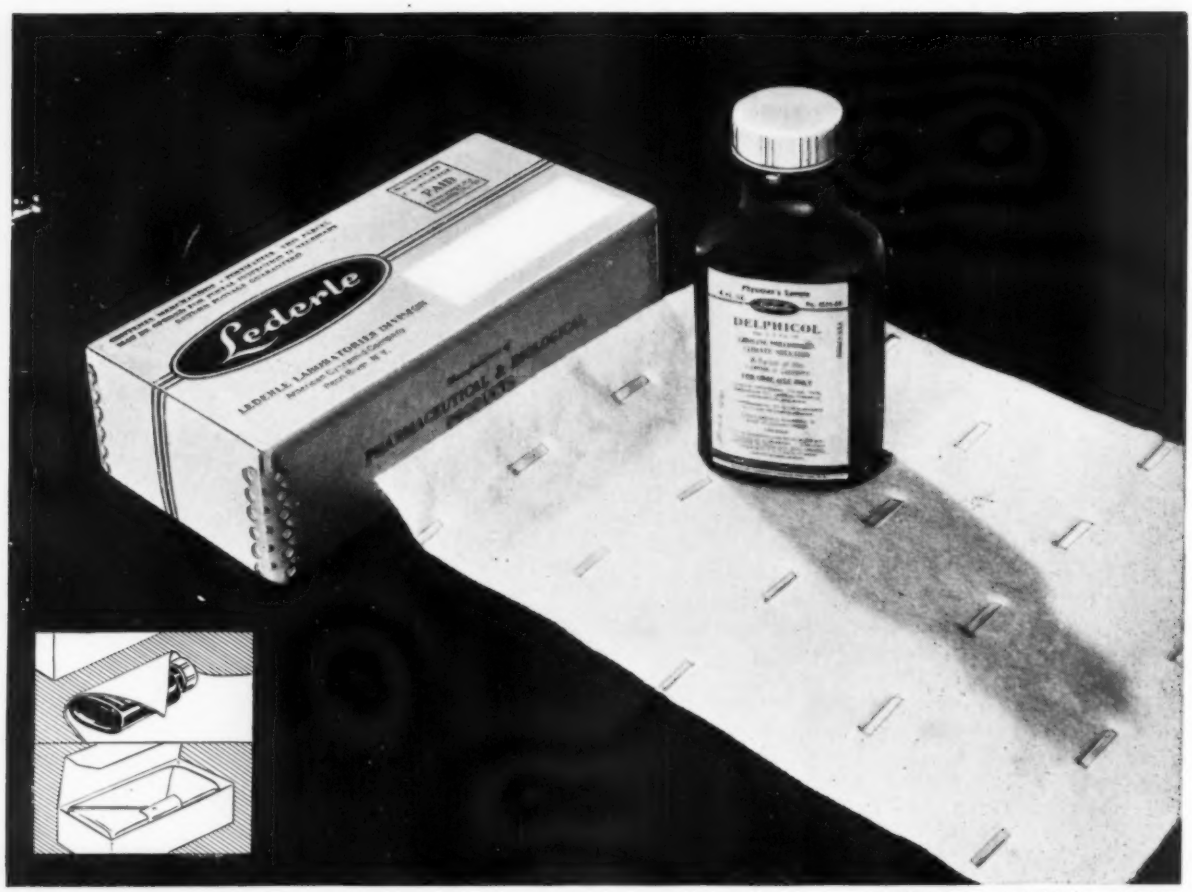


Photo courtesy Lederle Laboratories Div., American Cyanamid

Custom Protection

—the safe, smart way to package pharmaceuticals

Do you know how easy it is to prevent damage in transit—speed up packaging operations—and reduce shipping costs? You *will* know—when you try Kimberly-Clark Interior Packaging—KIMPAK*—a modern packaging material of unlimited versatility that provides *custom protection* for every type of pharmaceutical product. KIMPAK is especially suited for mailing liquid samples, since it will absorb up to 16 times its own weight in liquids within 30 seconds. KIMPAK is suggested in the Official Postal Guide not only for its absorbent qualities, but because it acts as a *cushioning* agent as well. It protects the most delicate products against damage in transit from shock, vibration and rough handling, yet is light enough to offset recent rate increases. KIMPAK is clean, soft and sanitary—as easy to apply as wrapping paper. And it's available in a wide variety of roll and sheet dimensions, in various thicknesses, with and without backing—to suit your specific need in the custom packaging of any type of pharmaceutical product. For complete information, write to Dept. **J-53,** Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark**

*T. M. REG. U. S. & FOREIGN COUNTRIES

search, Sherman & Marquette, a Chicago agency is quoted in a recent article. Said Mr. Schlinger, "Social science jargon occasionally masks results which are truisms. To say that people smoke because of oral erotic needs, for example, means simply that people smoke because they like the sensation of putting a cigarette in their mouth. Most of us already know this, and I, for one, never had any intention of putting my cigarettes any other place."

Unscented Perfume

There are said to be 7,000,000 women in this country who have some sort of cosmetic allergy. This, of course, is a guess, but it is no guess to state that conditions that could be classified as allergies have been increasingly recognized year by year in this country.

There have been several cosmetic companies who have built up a good solid cosmetic business based very largely upon a non-allergic appeal, and merchandised very much along the same procedure as ethical selling for pharmaceuticals. One of these companies, located in New York, that is, Almay, has been in business for over 20 years and has established an excellent standing with physicians.

Another company, The Ar-Ex Cosmetic Company, specializing in hypo-allergenic cosmetics was established around 1935 by Julius B. Kahn.

In a recent interview, Mr. Kahn made a statement that probably the most frequent allergy is in relation to perfume. According to Mr. Kahn, this can be overcome through the use of unscented perfume, toilet water and other cosmetics.

We have not had time to get around to it yet, but we are very anxious to get in touch with Mr. Kahn and get a sample of his unscented perfume.

What Fun, for Soap

Maybe the soap people are going to start using the exciting but uncertain path in marketing which the tooth paste people have had to follow during the last 15 years.

Because of the spectacular success of Dial in breaking into one of the tightest, if not the tightest, market in the United States, we hear that several soaps this year will appear with a similar or competitive bacteria-slaughtering chemical compound.

Does this mean a new step in the marketing of soap where the established functional purpose of the product will be subordinated to a series of so-called startling pluses to be provided year by year by the ever fertile and ingenious chemical industry?

Uphill Selling

The Popai symposium, which was attended by around 10,000 Point of Purchase Advertising people, produced some interesting discussions this year. As might be expected emphasis was placed on what happens in the retail store and at the retail counter as the critical stage of the journey a product makes from the producer to the consumer's home. The key to this convention could have been found in the phrase, "It's the last three feet that count most."

W. L. Stensgaard of Chicago listed four phases in the selling process.

Phase 1: National advertising.
Phase 2: Local advertising.
Phase 3: Point of purchase advertising.
Phase 4: The salespersons who meet the customer and complete the sale.

The first two phases, paid for and controlled by the manufacturer, he said, might be termed "downhill" selling. The last two phases should be termed "uphill" selling, and should receive a lot more attention than they are getting from many national advertisers.

Making It Easy

The Vitamin Corporation of America is introducing its ten-day weight control plan. This includes a "matchbook" for each day, which has the diet for the day with the number of calories involved, match-like strips which can be torn off to keep count of the calories as they are eaten. Also included are the three pills containing vitamins, minerals and bulking agent to be taken before each meal.

Jacket for Collapsible Tubes

The Approved Laboratories, 312 Seventh Ave., New York, has patented a protective plastic jacket which snugly fits over collapsible tubes, while a small piece of spring-leaf steel, inserted between the jacket and tube, on assembly, keeps the surface of the jacket smooth at all times. The sides of the tube automatically come together as the ingredients, such as tooth paste, are used up. Since the tube does not have to be rolled, folded, or twisted, but requires only finger-tip pressure, to extract the ingredients, says the manufacturer, the name on the tube is always visible, and "advertising matter remains legible throughout the use of the product."

Trade-marked the Everneat Tube Jacket, this device is being distributed exclusively by the Victor Industries Corp., 193 Newell St., Brooklyn. These jackets can be labeled by the individual manufacturers, before they insert their own unlabeled tubes. In this way, it is not necessary for the manufacturer to place printed matter on the tube itself, only on the jacket. After the tube has been inserted in the jacket, the flap, at the open end, is turned over and heat sealed.

Since the jacket serves as such good protection, says Victor, there is no need for separate cartons for each tube, and the shipping and display space can be reduced by as much as 40 per cent.

packaging news... by HARCORD

"A steady increase in sales", reports Yardley about its brown and buff paper package of Lavendomeal bath salts. We at Harcord like to feel that personal attention is responsible for our six years of service to Yardley.

The trade has already called Revlon's Fire and Ice promotion the most sensational in cosmetic history. This fine product made its bow in a provocative black and red paper canister. We take pride in producing the competitively priced packaging behind this amazing success story.

Attention-getting packaging is often the result of minute attention to details. Nestle-LeMur, another user of Harcord paper canisters, constantly gains wider distribution for its Blue Waltz Dusting Powder with its smartly designed package.

Since the introduction of the Du Barry Cologne Duo by Richard Hudnut more and more women have enjoyed receiving this delightful gift. We think that's a fine testimonial to a good product — well packaged by Harcord.

HARCORD MANUFACTURING CO., INC., *PAPER CANISTERS*

125 Monitor St., Dept. LC-5, Jersey City, N. J. — N. Y. Phone: BArclay 7-5685

Irwin, Neisler & Co. has marketed Cardalin-Phen as a companion product to Cardalin, its new, high dosage oral aminophylline drug combination. Both products produce results comparable to those obtained with intravenous or rectal administration of aminophylline.

Charles Antell has added Liquid Creme Shampoo to its line of shampoo cosmetics. Containing lanolin and hexachlorophene, the product is said to greatly reduce the number of skin bacteria. Duraglas bottles complete with labels and white plastic closures are manufactured by Owens-Illinois Glass Co.

Consolidated Cosmetics has announced its newest Lanolin Plus product, an All-Over Body Lotion." This lotion is intended to replenish the natural skin oils dried out by frequent bathing in much the same way the Lanolin Plus liquid restores youth-retaining oils to the face.

E. R. Squibb & Sons recently prepared the Dihydro Dispolator (Dihydrostreptomycin Sulfate for Inhalation Therapy), a disposable plastic inhaler containing 50 mg. of micropulverized dihydrostreptomycin sulfate. It is indicated in cases of bronchiectasis, chronic and allergic bronchitis, acute and subacute respiratory infections susceptible to dihydrostreptomycin, and for prophylaxis in chest surgery.

Squibb is supplying Enzodase (Squibb Hyaluronidase), an enzyme which hastens the absorption of substances injected subcutaneously. The enzyme breaks down hyaluronic acid, enabling foreign substances to spread through the tissues much more rapidly.

Armour Laboratories is offering Deltamide, a mixture of four sulfonamides, for use against infections due to Group A hemolytic streptococci and other microorganisms susceptible to sulfonamides. Each tablet or teaspoonful contains 0.5 gm. of all the sulfonamides, sulfadiazine, sulfamerazine, sulfamethazine and sulfacetamide.

Toni has developed Silver Curl, a new kit especially for waving white or gray hair. The product contains special ingredients which are guaranteed not to discolor gray hair. In addition, it offers an easy self-neutralizing process.

Upjohn has prepared two new products, Kaopectate with Neomycin, a palatable, aqueous preparation of the wide-spectrum antibiotic, neomycin sulfate, with kaolin and pectin suspended with methyl-cellulose, and Depo-Cer-O-Cillin, Chloroprocaine, a brand of chloroprocaine penicillin 0, a water-insoluble, crystalline salt of penicillin 0, packaged 1,500,000 units in a sterile vial.

Kaopectate with Neomycin is indicated in the symptomatic treatment of diarrhea and as a specific therapy in bacterial diarrhea caused by neomycin-susceptible organisms. Depo-Cer-O-Cillin Chloroprocaine is indicated for the same conditions which call for penicillin G, since the range of antibacterial activity and blood concentrations following intramuscular injection are also similar to penicillin G.

Helena Rubinstein is distributing Hair Spray, a fine, non-sticky spray that not only keeps unruly ends in place but also helps control coarse or hard-to-manage hair.

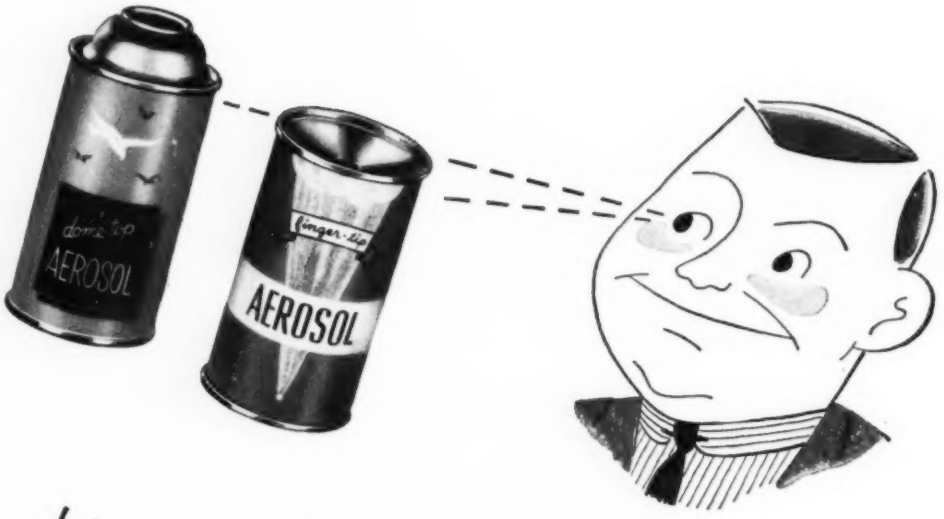
Armour Laboratories has combined Saccharin sodium U.S.P. with vitamin B_{12} crystalline U.S.P. to produce Saccharin '12, for use wherever a non-caloric sweetening agent is required

The Anahist Company has introduced Liquid Anahist, a cherry-flavored syrup. It includes 12.5 mg. of thonzylamine hydrochloride per teaspoon, and is recommended for relieving cold and hay fever symptoms of children and adults who prefer a liquid medication, or who prefer a reduced dosage.

Smith, Kline & French Laboratories has introduced Dexedrine Spansules 10 mg., an alternate dosage strength of Dexedrine. Each Spansule contains dextro-amphetamine sulfate, S.K.F., distributed among many tiny pellets with varying disintegration times. The drug is released gradually over 8 to 10 hours, with therapeutic effect lasting for about 10 to 12 hours.

George A. Breon & Co. has made a more effective analgesic preparation by the addition of 5 mg. of dihydrocodeinone bitartrate to Anodynos Tablets, an aspirin-acetophenitidin-caffeine combination. The new combination is called Anodynos-DHC Tablets. Advantages to the product are that tolerance is developed more slowly, it has a relatively low addiction liability, and is not constipating.

Breon has also introduced a new combination, called Bredative, which provides both sedative and hypnotic action. It is a combination of two barbituric acid derivatives, sodium pentobarbital and phenobarbital, and is supplied in uncoated, pink-colored tablets. The compound insures the production and maintenance of even sedation.



How will you have your **AEROSOLS** today?

Maybe you prefer the dome-top aerosol with a 1-inch curl opening. Maybe your choice is a concave top aerosol perforated to take the most popular types of valves. You may want a standard can or a midget —to take 12 or 6 ounces of most products that are at their best when sprayed.

As part of Continental's tailor-made service, *we offer a bigger selection of aerosol cans than any other supplier.* Plus, of course, precision manufacture and needle-sharp lithography that rings the cash-register. For the best in product and the best in service, call on Continental now!

CONTINENTAL CAN COMPANY

CONTINENTAL CAN BUILDING
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Eastern Div.: 100 E. 42nd St., New York 17 • Central Div.: 135 So. La Salle St., Chicago 3
Pacific Div.: Russ Building, San Francisco 4

Doin's ... (CONTINUED)

Seaforth is featuring an assortment of gifts in the lower price range for Father's Day, including the Seaforth Mug and Jug Set, GroomStick, the Crystal Threesome of Shave Lotion, Men's Cologne and Men's Talc, and the Seaforth Shave Lotion.

Chas. Pfizer & Co. is marketing, for prescription sales, orange-flavored Candettes, troches containing bacitracin and polymyxin B. This combination is designed for control of superficial infection of the mouth and throat.

Shulton has introduced its new pressurized Old Spice Smooth Shave in the Spra-Tainer, manufactured by Crown Can Co. The instantaneous lather, according to Shulton, is of a new type formula which makes it unusually soft and light.

Dermetics has three perfumed colognes, Pink Fragrance, White Fragrance and Blue Fragrance. These "Dotted Swiss" Colognes are packaged in a counter-display unit containing four of each.

Harriet Hubbard Ayer has created a Beautifying Mask, a creamy, scented mask that shrinks pores as it hugs the face and neck.

Nestle-LeMur has announced a special deal in Mavis and Djer-Kiss brands from May 1 through the end of June. The 10-ounce size of Mavis Talcum Powder, regularly 59 cents, is being offered for 39 cents. The $1 size of Djer-Kiss perfume is included free in a combination package with each 59-cent size Djer-Kiss talcum powder in a special deal, also from May 1 through June 30.

Merck has prepared Vetstrep, the Merck brand of oral veterinary streptomycin sulfate, for the treatment of swine enteritis, calf scours and enteritis in several other animals. It is in granular form which dissolves quickly and may be given to animals in drinking water or milk.

Heyden Chemical Corp. has begun commercial production of Pro-Gro-B, a new B_{12} feed supplement concentrate designed to be used with Pro-Gro, a flexible antibiotic feed supplement in concentrated form.

A new technical bulletin, "Pro-Gro-B Vitamin B_{12} Feed Supplement Concentrate", summarizing technical data on the use of this new product, may be obtained by writing the company at 342 Madison Ave., New York 17.

Thos. Leeming & Co. is distributing Metamine, a new amino nitrate for the prevention and management of angina pectoris. It is effective in smaller dosage than previous remedies and is reported to be free of side reactions.

Wyeth Laboratories has introduced three new products: Plavolex, a super-refined dextran solution for injection when the physician or surgeon deems it advisable to increase the fluid volume of the circulatory system; Bicillin All-Purpose, an injectable penicillin combining, in a single preparation, Bicillin, procaine penicillin and potassium penicillin, valuable in the treatment of patients with virtually any penicillin-susceptible infection; and Aludrox, a pleasantly-flavored antacid in suspension and tablet form which controls temporary gastric hyperacidity.

Pfizer has chemically combined streptomycin and isoniazid into a single drug, called Streptohydrazid. Early tests with the drug, according to the company, indicate it should be a powerful weapon in the hands of the tuberculosis specialist since it is useful against tuberculosis germs which are able to withstand the attacks of either streptomycin or isoniazid alone.

Caryl Richards has announced a new professional permanent, Rocket Wave with Milk Bath, which contains peptonized milk nutrients. The Milk Bath neutralizer insures "glorious hair conditions" after the permanent. No pre-conditioning treatments are necessary.

S. F. Durst & Co. has prepared a new product, Pedameth (dl-Methionine, "Durst") for safe, effective therapy in diaper rash. One capsule is opened and added to the contents of the baby's daily formula.

Dodge & Olcott has developed a new line of perfume bases designed specifically for scenting liquid and powder detergents. Called Deteromes, the new odorants have been designed to withstand the unusually high temperatures of manufacturing processes and to mask even the tenacious odor of the petroleum base most frequently used in synthetic detergents.

Organon has introduced Surdon, a new product which helps control the symptoms of premenstrual tension and dysmenorrhea. The tablets are recommended in an average dose of one or two a day during the last seven to ten days of the menstrual cycle.

NEW PERFECTION = DROPPING PARTS

QUALITY UNIFORMITY CLEANLINESS SERVICE

#1

Non-rolling, extra-depth, Bakelite Cap; thick flange rubber bulb; Saftee ballglass.

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

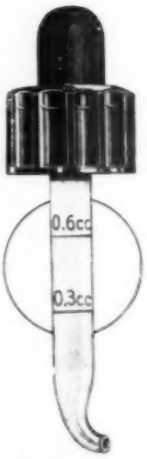
#4

Metal cap; oil-resisting Amekine synthetic rubber bulb; blunt glass.

By the Originators and World's Largest Manufacturers of Screw-Cap Dropping Parts

Since 1931, when the screw-cap dropping part was originated by Pennsylvania Glass Products, the world-wide acceptance of New Perfection has been increasing. The fact that the New Perfection Dropping Part is the most practical and sanitary dispensing unit for liquid preparations accounts for its popularity and the steady growth of our operations is due to the efficiency with which our products are manufactured and distributed.

Our exacting standards for quality, uniformity and cleanliness guarantee that each shipment will meet your most rigid specifications. Our policy is to produce and sell the best in dropping parts—and thus merit your continued patronage in the future as we have in the past.



#2

Non-rolling, extra-depth, Bakelite cap; thick flange rubber bulb; special bent glass (CALIBRATED in color)

New Modernistic bottle. Designed to lie flat for convenient labeling. Oval front provides ample label space.

New Perfection Dropping Parts, either plain or CALIBRATED IN COLOR, can be supplied to fit your bottle or with our new Modernistic style bottles. Our bottles are available in Amber, Blue, Green or Clear glass in 2 cc, ⅛, ¼, ½, 1 and 2 oz. capacities. Special oil-resisting AMEKINE synthetic rubber bulbs can be supplied with oil products, or natural rubber bulbs for general usage.

Write for Samples and Quotations

PENNSYLVANIA GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

She wants the best...

Empress molded closures give your product sales appeal...convenience.

the closure helps the package say—I'm It

To make your package speak for the quality of your product, it must be in complete harmony from top to bottom. The right closure is the finishing touch.

Owens-Illinois molded closures are not only colorful eye-catchers that help packages to stand out on any retail shelf or counter, they are delightful to use.

So if you want a package with personality—an efficient package that truly represents your product and keeps it up front in sales appeal, give it the sales plus of a *sales* minded closure.

CLOSURE DIVISION — OWENS-ILLINOIS GLASS COMPANY

TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Aerosol Products
point up popularity of this

Now on Market

modern method of packaging

"FREON" PROPELLENTS ARE KEY TO THEIR SUCCESS

Ever since aerosol (pressure-packed) products appeared on the market shortly after World War II, aerosol sales have steadily boomed. At first, only insecticidal aerosols were available. But the aerosol method of dispensing quickly took hold and many new aerosols were soon introduced. The buying public approved them, and it is estimated that approximately 70 to 80 million aerosols were packaged in 1952.

TODAY, the list includes dozens of aerosol-packed products:

Adhesive sprays
Anti-static sprays
Artificial snow
Athlete's foot preventives
Bactericides
Burn preparations
Cold preventives
Colognes and perfumes
Dust mop spray
Fabric refinishers
Fungicides
Fur lusterizers
Hair dressings
Hosiery run preventives
Ignition waterproofers
Industrial belt dressings
Insecticides
Insect repellents
Lubricants and rust preventives
Mold-release lubricants
Mothproofers
Paints, lacquers, enamels
Personal deodorants
Pet sprays
Plastic sprays
Rug cleaners
Shampoos
Shaving creams
Shoe polish (foam)
Space deodorants
Spot removers
Stenciling inks
Suede refinishers
Suntan oils
Topical anesthetics
Upholstery cleaners
Waterproofing liquids
Weed killers
Window cleaners

For six consecutive years Du Pont has conducted a study of dealer and consumer reactions to this modern method of pressure packaging. Each study has shown that all types of aerosol products are gaining in popularity and that more and more dealers are stocking them. A digest of the latest survey report will be sent free upon request. It highlights many pertinent details about this market.

An important factor in the success of practically all pressure-packed products is the use of Du Pont "Freon" propellents. These are the inert ingredients that dispense the contents of the package. There is a "Freon" propellent designed to dispense almost every kind of product, whether of foam or spray type. These propellents are safe . . . nonflammable, nonexplosive, virtually nontoxic and they are produced by laboratory-controlled methods of manufacture that further insure the satisfactory operation of the aerosol product.

Call on us for assistance if you are considering pressure packaging one or more of your own products. Address: E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div., Wilmington 98, Delaware.

DU PONT "FREON"

KINETIC

SAFE PROPELLENTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

DU PONT

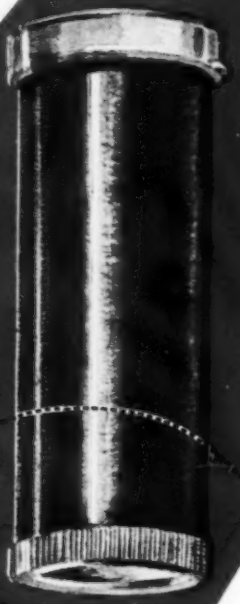
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

glamorize and merchandise

your solid cologne
solid toilet water
facial and hand creams
deodorants
after shave lotions

with the **NEW KING SIZE**
1 OUNCE CAPACITY



cal umet **Swivelpak**

PROPEL-REPEL
AIRTIGHT
SHRINK-PROOF
CONTAINER

IN GLORIOUS COLORS AND COMBINATIONS

no moulding required... product can be poured directly into container... eliminates necessity for costly foil wrapping.

CALUMET *Manufacturing Co., Inc.*

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PLANTS: NEW YORK CITY, BLOOMFIELD, N. J., WATERBURY, CONN.
IN CANADA: CALUMET DIVISION OF ERIC H. HARDMAN, LTD.
137 WELLINGTON ST., WEST, TORONTO, CANADA

PAT PEND

Practical, widespread pressure packaging had its start with Crown's invention of SPRA-TAINER . . . World's First and Best Selling propulsion can. Crown leadership is further reflected in the design and manufacture of a vast variety of other fine cans for many different industries.

One of America's Largest Can Manufacturers

CROWN CAN
PHILADELPHIA
Division of
CROWN CORK & SEAL COMPANY

PHILADELPHIA, CHICAGO, ORLANDO, NEW YORK, BALTIMORE, ST. LOUIS, BOSTON

Our finest quality glass stoppered bottles
for perfume and toilet water

Tester Bottles

Left: No. H-900 (footed)
No. S-7222 elongated stopper

Right: No. H-900
No. S-300 elongated stopper

No. 352

Available in 7 sizes from ⅛ oz. to 8 oz. Supplied plain or with fired-on ceramic labels.

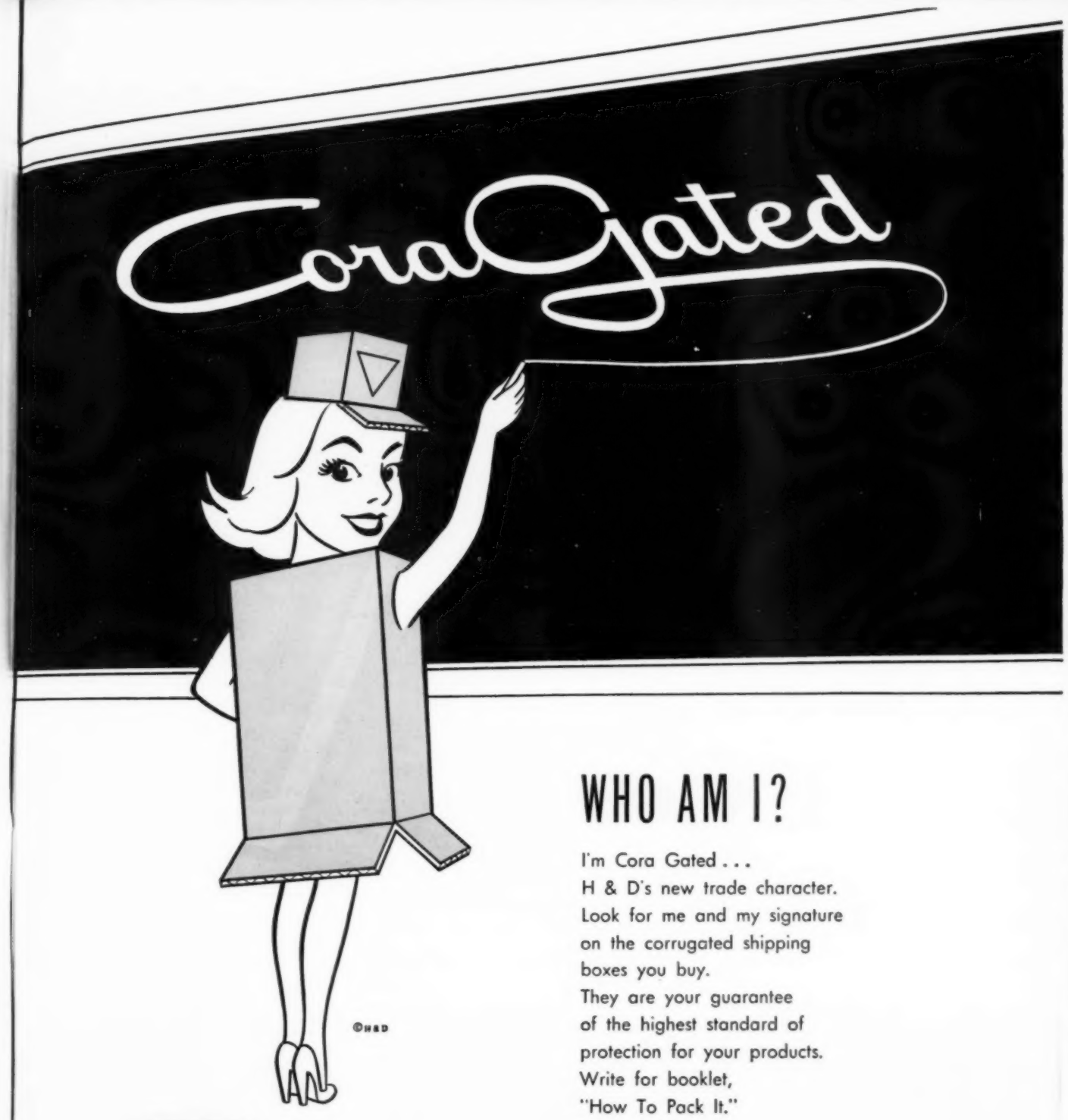
No. 435

Made in 3 sizes only—½ oz., 1 oz., 2 oz. Available plain or decorated.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • *New York Office:* 40 W. FORTIETH ST. • *Chicago Office:* 1572 MERCHANDISE MART



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I'm Cora Gated . . .
H & D's new trade character.
Look for me and my signature
on the corrugated shipping
boxes you buy.
They are your guarantee
of the highest standard of
protection for your products.
Write for booklet,
"How To Pack It."
Hinde & Dauch,
Sandusky, Ohio.

H&D®

HINDE & DAUCH

17 MILLS AND FACTORIES • 40 SALES OFFICES

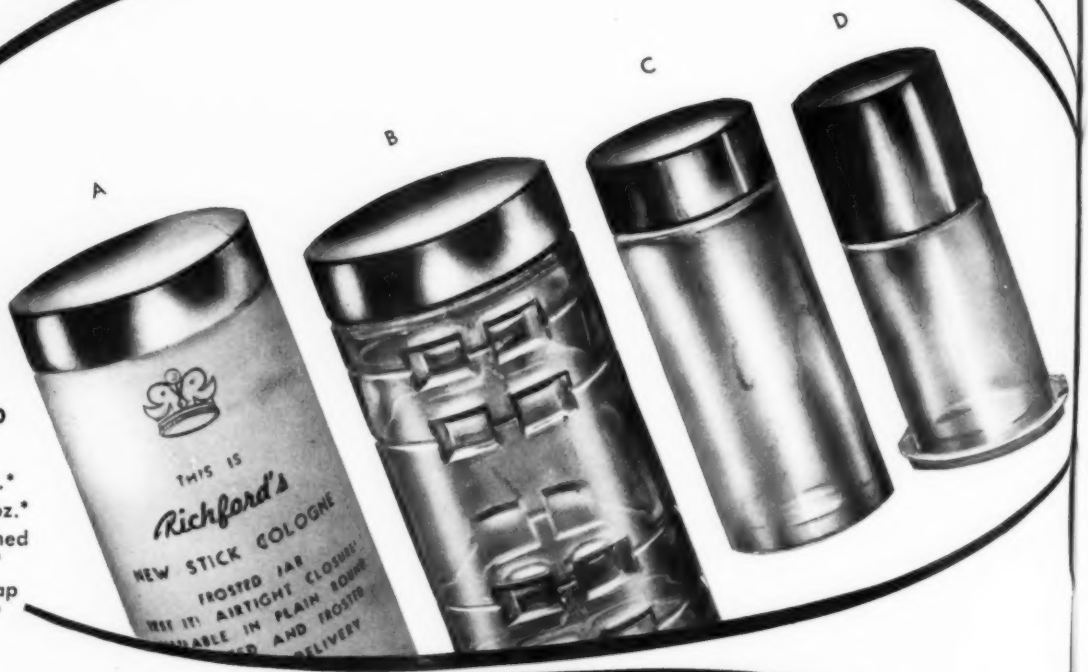
Headliners again in 195

STICK CONTAINERS FOR —
COLOGNE · DEODORANT
SOLID HAND LOTION · AFTER SHAVE

In Glass

WITH HIGHLY-POLISHED GOLD TONE CAPS

A. B48 PLAIN, 2-2½ oz.*
B. B48 FANCY, 2-2½ oz.*
C. B32 (Threaded polished brass cap), 1 oz.*
D. B31 (Polyethylene snap cap base), ¾ oz.*

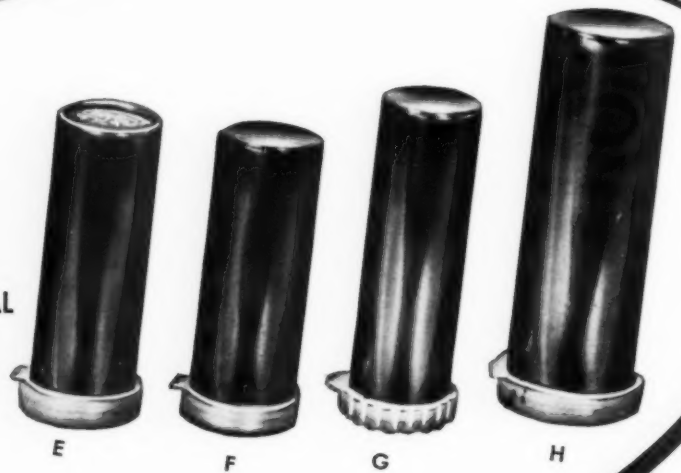


AND THE **NEW**
PURSE SIZE STICK CONTAINERS

In Metal

HIGHLY-POLISHED GOLD TONE, WITH POLYETHYLENE SNAP CAPS FOR TIGHT SEAL

E. EF292 (Push-up with foolproof push-up seal), ½ oz.*
F. TF291, ½ oz.*
G. AR284, ½ oz.*
H. LF293, ¾ oz.*



RICHFORD
CORPORATION

Write for samples and prices

*Approx. Net

251 FOURTH AVENUE, NEW YORK 10, N. Y.

News . . .

Beesley, President of Eli Lilly

J. K. Lilly has become vice-chairman of the board of directors of Eli Lilly & Co., while E. N. Beesley, executive vice-president, has become president of the company. F. M. Hadley has been named a member of the board and executive vice-president, succeeding Mr. Beesley.

Mr. Lilly joined the company in 1914, 38 years after its founding by his grandfather, Colonel Eli Lilly, and was the fourth member of the family to head the Lilly concern as president. J. K. Lilly was named vice-president in 1923, and executive vice-president in 1944, also serving as president of the export affiliates until 1948. He became president of the company in 1948 when his brother, Eli Lilly, was named chairman of the board.

During J. K. Lilly's five years as president, the company reached the largest sales in its history, and it started work on the multimillion-dollar Tippecanoe Laboratories at Lafayette, Indiana.

E. N. BEESLEY

F. M. HADLEY

JACK MANOHA

Patterson, Advg. Director

Hubert L. Patterson has been appointed director of advertising, White Laboratories. He had formerly been director of sales promotion and sales training.

Appointed Director

M. M. Ricketts has been elected to the board of directors of Strong Cobb & Co. He is also a vice-president of Strong Cobb, and general manager of its American Chlorophyll division, with headquarters in Lake Worth, Florida.

Pfizer Experimental Farm

Chas. Pfizer & Co., Inc. has opened a new experimental farm at Terre Haute, Ind., combining for the first time animal nutrition and veterinary medicine into a single research unit. Complete facilities including laboratories and offices are located in the center of a 700-acre tract formerly occupied by a federal ordinance plant.

Hundreds of hogs, chickens, cattle and small animals in all stages of maturity are available for experimental feeding and research in disease control.

The farm research team is headed by Herbert G. Luther, director of agricultural development for Pfizer, and Dr. James McGinnis, poultry nutritionist.

Givaudan Expands Facilities

The Givaudan Corp. has continued to expand its plant facilities, according to E. R. Durrer, president, with the opening of two additional floors in a new building which was erected in 1951. The new floors will contain the executive offices of the plant, as well as the research laboratories and engineering department.

The largest of the 10 laboratories is the one used exclusively by the analytical department; several others are devoted to scientific research, and one is used for bacteriological research and sales service problems of a biological nature.

Lilly Marketing Conference

Managers of the domestic sales districts of Eli Lilly & Co. held a six-day Marketing Management Conference in Indianapolis last month. The program covered business outlook, latest research developments, newest information in major fields of medicine, and a discussion of promotional activities for the coming year.

Speakers during the session included 17 medical doctors of the Lilly staff and 14 company executives.

Kearns Wins $500 Scholarship

Joseph L. Kearns, metropolitan salesman for A. Gross & Co., has been awarded a $500 scholarship for advertising, publicity or marketing studies by the Advertising Club of New York. The award was given as first prize in an essay contest conducted by the Club on completion of its course in advertising and selling.

Manoha, Houbigant Exec. V.P.

Jaques H. Manoha has been elected executive vice-president of Houbigant, Inc., Cheramy, Inc., and Houbigant Sales Corp. He has been a member of the Houbigant organization for the past 30 years.

Pharm. Education Elections

Robert L. Swain, editor, Topics Publishing Company, was elected president of the American Foundation for Pharmaceutical Education at its 11th annual meeting in New York last month. James J. Kerrigan, president, Merck & Co., was elected vice-president; Howard B. Fonda, senior vice-president, Burroughs, Wellcome & Co. (USA), became treasurer; James F. Hoge, of Rogers, Hoge & Hills, counsel; and W. Paul Briggs, former Dean, the George Washington University, secretary.

Eli Lilly, chairman of the board, Eli Lilly & Co.; Charles S. Beardsley, chairman of the board, Miles Laboratories; and J. Preston Levis, chairman of the board, Owens-Illinois Glass Co., were reelected as directors.

Dr. Morris Fishbein, former editor, Journal of the American Medical Association, addressed the Annual Appreciation Luncheon at the Biltmore, attended by about 100 patrons of the Foundation. He reviewed the progress in pharmaceutical education and the basic importance of pharmacy in the entire medical-care picture.

Schoettle Case Histories:

true story of a

Purchasing Agent on the Ropes

CASE HISTORY #107 Sales had been zooming and one of our important baking company customers* suddenly discovered it had only one day's supply of special U-cards for sliced cake . . . Purchasing Agent was on the ropes . . . didn't realize inventory was so low . . . A plea for help . . . no U-cards, no sliced cake! (And, maybe no Purchasing Agent!) Schoettle came to the rescue, delivered U-cards on 2-days' notice. Took PA off the ropes!

CASE HISTORY #95 Dairy* said they must get into the market quick with an ice cream sandwich container, to meet competition. Schoettle is large producer of boxes for entire Ice Cream Industry, so we were able to ship boxes from stock on very next day . . . and Ice Cream Sandwiches were in stores two days later . . . Purchasing Agent, hanging on the ropes and counting the minutes, breathed sigh of relief . . . and thanks!

Schoettle never throws in the sponge when a Purchasing Agent is hanging on the ropes . . . We go all out to KO his carton problems the minute the (phone) bell rings . . . Championship service like this has won Schoettle "box-ing" fans throughout industry . . . And if YOU'd prize a good man in YOUR corner, your next bout with boxes, just make Schoettle your "second" . . . FIRST!

*name on request

EDWIN J. SCHOETTLE CO.

533 NORTH ELEVENTH STREET • PHILADELPHIA 23, PENNA.

Designers and Manufacturers of Paper Boxes with Buy Appeal

Sumner Named Norwich V.P.

Howard A. Sumner has been elected vice-president of the Norwich Pharmacal Co. and will be in charge of market development and public relations, according to Melvin C. Eaton, president. He is a director of the company and also president of its subsidiary, Eaton Laboratories, Inc.

HOWARD A. SUMNER

Innis-Speiden Offices Moved

The New York sales and executive offices of Innis, Speiden & Co., Inc., have been transferred from 117 Liberty St. to the larger offices of Berkshire Chemicals, Inc., 420 Lexington Ave., New York 17. The telephone number is LExington 2-5959.

Pringle Heads Research

John A. Pringle, with Julius Schmid, Inc. for more than 10 years as director of the gynecological division, has been appointed director of research.

Irwin-Neisler Winners

Seven Irwin, Neisler & Co. contest winners, and their wives, recently enjoyed a week-long Cuban holiday at company expense. The B.E.S.T. (Building Extra Sales Together) Contest, part of Irwin-Neisler's 1952 overall sales program, was open only to sales representatives of the company.

Those who went on the trip were Mr. and Mrs. Gilbert E. Arbuckle, North Hollywood, Calif.; Mr. and Mrs. Robert Chvatal, Bedford, Ohio; Mr. and Mrs. Seymour L. Davidson, Miami; Mr. and Mrs. Burke DeLong, Fort Wayne, Ind.; Mr. and Mrs. George Goodall, Belleville, Ill.; Mr. and Mrs. Thomas A. Terveer, Beloit, Ohio; and Mr. and Mrs. Marvin R. Weiss, Brooklyn.

Following a "first-nighter" dinner at the Hotel Sovereign, Miami, the group flew to Havana where they were guests at the Hotel Nacional for five days. They returned to the United States, stopping at New Orleans.

Taft Named V.P., Schenley

Clarence B. Taft has been elected vice-president in charge of product development for Schenley Laboratories, Inc., according to Arthur C. Emelin, president. He has directed product development for the company since 1949 and will continue to make his headquarters in New York.

CLARENCE B. TAFT

Named Agent for Monsanto

Riches-Nelson, Inc. has been appointed sole selling agent in the United States for Monsanto Chemicals Limited, London, England. Those chemicals which Riches-Nelson will sell include commercial ethyl silicate, tetraethyl-orthosilicate, parachlormeta cresol, parachlormeta xylenol, pure meta cresol, pure para cresol, ortho cresotinic acid, meta cresotinic acid, dichlormeta xylenol, chlor-X-cresylic, phenol sulphonic acid, sodium sulphate and sodium sulphite.

Win Abbott Citations

One woman and five men received Abbott Laboratories' 1953 annual awards for outstanding scientific achievement at Abbott's 8th annual dinner for members of the research, control and development departments. Four hundred employees and guests were present to see Dr. Ernest H. Volwiler, president and general manager, give out the awards to the following winners:

Mrs. Eleanor Willerton, microbiological research department, for her work in developing testing methods for vitamins and amino acids; Arnold E. Osterberg, clinical investigation staff, for his role in Abbott's development of intravenous fluids; J. D. Taylor, pharmacology department, for his research on the metabolism of anesthetics and antihistamines; Herbert O. Duescher, assistant manager of Abbott's control laboratories, for helping with new instrumental testing procedures used to insure drug quality; Fred L. Ferger, control department, for helping develop techniques to assay alkaloids; and Lester A. Feiertag, pharmaceutical development research department, for his contributions in the field of analytical chemistry and pharmaceutical development.

Allen, Zonite Advg. Mgr.

Bruce B. Allen has been appointed advertising and sales promotion manager, according to Harris M. McLaughlin, president.

Winners of Irwin-Neisler sales contest boarding plane for beginning of Cuban holiday. First row, left to right: Seymour L. Davidson, George Goodall, Mrs. Goodall, Mrs. Thomas A. Terveer, Mrs. Robert W. Chvatal, Mrs. Burke DeLong, Mrs. Gilbert E. Arbuckle, Mrs. Marvin R. Weiss and Mrs. Davidson. Second row: Messrs. Terveer, Chvatal, DeLong, Arbuckle and Weiss.

Robins Dedicates New Plant

A. H. Robins Co. formally dedicated its new $1.5 million plant during the week of April 20-25 at 1407 Cummings Drive, Richmond. This now brings under one roof the general offices, development and research laboratories and production and shipping facilities.

Entrance of new $1.5 million plant of A. H. Robins Co. which brings under one roof the general offices, development and research laboratories and production and shipping facilities. Formal dedication of the plant took place during week of April 20.

Buys McArthur Chem.

A majority of the common stock of the 111-year-old McArthur Chemical Co., Ltd., of Montreal and Toronto, has been acquired by St. Maurice Chemicals Ltd., according to a joint announcement by John P. Remensnyder, chairman of the board, and V. G. Bartram, president, of St. Maurice, which is jointly owned by Heyden Chemical Corp. and Shawinigan Chemicals Ltd.

Robert Berry, president of McArthur since 1947, will continue as president and the present organization will be retained.

Eaton Honored by Norwich

Robert S. Eaton, chairman of the board of the Norwich Pharmacal Co., was guest of honor at a dinner on April 23 in recognition of his 50th year of association with the company. He started working for the company as accountant and subsequently served in several executive positions, including the presidency.

McDaniel, Norman—V.P's.

Max A. McDaniel has been appointed vice-president and general manager, and Henry J. Norman, vice-president in charge of sales operations, of Union Pharmaceutical Co., Inc. and Artra Cosmetics, Inc., subsidiaries of Schering Corp.

Mr. McDaniel has been supervisor of the metropolitan division of the domestic sales division of Schering since 1949, and Mr. Norman, sales manager of Union and Artra since 1950.

MAX A. McDANIEL

HENRY J. NORMAN

Two Articles on Givaudan

The story of Givaudan-Delawanna, Inc. was featured in the March issues of *Esso Oilways*, publication of Esso Standard Oil Company, and *Via Port of New York*, published by the Port of New York Authority. The former article, entitled "Essence of Love," was introduced as, "The story of one of the most widely known makers of synthetic aromatic chemicals for producers of perfume and other products." The second article, "Aromatic Chemicals," carries several photographs taken at the company's Delawanna plant and New York laboratories, referred particularly to the firm's use of the New York port in its business.

Named St. Maurice Directors

Arthur R. Broadman, assistant vice-president of Heyden Chemical Corp., and Henry G. Walter, Jr., partner in the New York law firm of Fulton, Walter and Halley, have been elected directors of St. Maurice Chemicals, Ltd., according to V. G. Bartram, president of St. Maurice. P. W. Wright has also been elected a director of the company, representing Shawinigan Chemicals, Ltd.

Squibb Lab. in Istanbul

E. R. Squibb & Sons is officially opening a laboratory in Istanbul, Turkey, or on about May 29, according to Lester Manning, Squibb executive vice-president for overseas operations. This is the 15th manufacturing laboratory to be established abroad by the company.

The first pharmaceutical plant to be built with both Turkish and American capital, the Squibb plant will also be the first in that country to manufacture penicillin and streptomycin products, Nydrazid, insulin, B_{12} and other vitamins, and a full line of drugs developed in the research laboratories of this country and Europe.

The announcement was made at an informal reception at the Waldorf-Astoria Hotel. Among those present to represent the Turkish Government, were, Dr. Cemalettin Or, International Relations Officer for the Turkish Ministry of Hygiene and Social Assistance; Dr. S. K. Gokay, Governor-Mayor of the city of Istanbul; Ambassador Selim Sarper, Chief Turkish Delegate to the U.N.; and Nuri Eren, director of the Turkish Information Service.

The official opening of the plant has been set for the end of May to coincide with the national celebration in Turkey of the 500th Anniversary of the capture of Constantinople by the Turks.

In Schenley Sales Post

James Winning has been appointed sales training director for Schenley Laboratories, according to Arthur F. Gormley, vice-president in charge of sales and advertising. He will be responsible for directing the home office and field training of new sales representatives, and the continuing field and correspondence training of Schenley's district managers and veteran sales representatives.

a dependable preservative from a reliable source . . .

for preserving the flavor and quality of food, beverages, syrups, concentrates . . . safely and economically

Heyden SODIUM BENZOATE

Other Heyden products important in flavoring and preserving . . .

BENZOIC ACID
BENZALDEHYDE
METHYL SALICYLATE
PROPYL GALLATE
SACCHARIN
SACCHARIN SODIUM

HEYDEN CHEMICAL CORPORATION
342 Madison Avenue, New York 17, N. Y.
CHICAGO • PHILADELPHIA • SAN FRANCISCO • DETROIT • PROVIDENCE

Benzaldehyde • Benzoates • Benzyl Chloride • Chlorinated Aromatics • Creosotes • Formaldehyde • Formic Acid
Glycerophosphates • Guaiacols • Hexamethylenetetramine • Medicinal Colloids • Methylene Disalicylic Acid • Neomycin • Paraformaldehyde
Parahydroxybenzoates • Penicillin • Pentaerythritols • Propyl Gallate • Resorcinol • Salicylates • Salicylic Acid • Streptomycin

KIMBLE'S NINE YEARS' SEARCH ENDS IN A BLUE BAND

Ampuls are hermetically sealed containers for serums, drugs and other lifesaving solutions.

Kimble Neutraglas ampuls are made from a famous formula which has the highest resistance to chemical attack of any known "workable" glass. They give it perfect protection.

But ampuls for years have been unhandy to open. It was necessary to file the ampul's neck and break it off.

Kimble tackled this problem 9 years ago. Recently Kimble perfected a patented blue ceramic band around the neck of the Kimble Neutraglas ampul.

Grip! Bend! Snap! A clean, easy break and Neutraglas ampuls are ready to use. *No* filing. *No* scoring. *No* sawing.

Kimble Neutraglas Color-Break* Ampuls are another Kimble contribution to the nation.

Kimble Serves—with Glass

KIMBLE PRODUCTS

Laboratory Glassware . . . Television Bulbs . . . Communication and Power Insulators . . . Color-Break Ampuls . . . Insulux Glass Blocks . . . Opticlear Vials . . . Thermometers and Hydrometers . . . Towel Bars . . . Glass Rod and Tubing . . . Chemically Resistant Glassware . . . Custom-made Bottles . . . Pressed Glassware . . . Clinical Glassware

*Color-Break is a trade mark of the Kimble Glass Company

KIMBLE GLASS COMPANY

Toledo 1, Ohio—*Subsidiary of Owens-Illinois Glass Company*

W. F. WILSON

WILLIAM M. ROBERTSON

ROBERT A. GLAENZER

Wilson, Pres., Anchor Cap

W. F. Wilson has been elected president of Anchor Cap & Closure Corp. of Canada, Ltd., an Anchor Hocking subsidiary, succeeding the late J. O. Deegan. R. P. Herrold, an Anchor Hocking vice-president, was elected chairman of the board of the Canadian company, and H. E. W. Filmer, formerly assistant secretary and assistant treasurer, was elected secretary.

C. A. Geddes continues as vice-president, while E. H. G. Secker is treasurer and assistant secretary.

Lilly Expansion

Ground has been broken for a new development and control building at Eli Lilly & Co. in Indianapolis. The 4-story structure, which will be 218 feet long and 47 feet wide, will provide 41,000 square feet of floor space for development and control administration, biochemical manufacturing administration, the medical division, the research library and the patent department.

The building is expected to be completed by the middle of 1954.

Furman Resigns as V. P.

Gerald S. Furman has resigned as vice-president of Gane & Ingram, Inc. and A. Maschmeijer, Jr., Inc. He will announce his future plans in the next few weeks.

Littlejohn Named Editor

W. R. Littlejohn has been appointed editor of the Perfumery and Essential Oil Record. He is a Member of the Society of Public Analysts, the Royal Society of Chemical Industry, the English and French Cosmetic Societies, Associate of the Institute of Chemistry, Fellow of the Chemical Society, Oil and Colour Chemists Association, Member of the British Standards Institution and the Colonial Products Advisory Committee.

Robertson Named Sales Mgr.

William M. Robertson, Owens-Illinois Glass Co. has been named drug and chemical sales manager in the company's glass container division. He has headed the proprietary, pharmaceutical, toiletry and cosmetic phase of drug and chemical sales since 1941. In addition, his new responsibilities include the direction of household and chemical and prescription ware sales.

Robert A. Glaenzer, of the division's New York branch sales office, has succeeded Mr. Robertson.

Flatow Named Kessler Agent

Kessler Chemical Co. has appointed R. E. Flatow & Co., 244 California St., San Francisco 11, as agent in the San Francisco area.

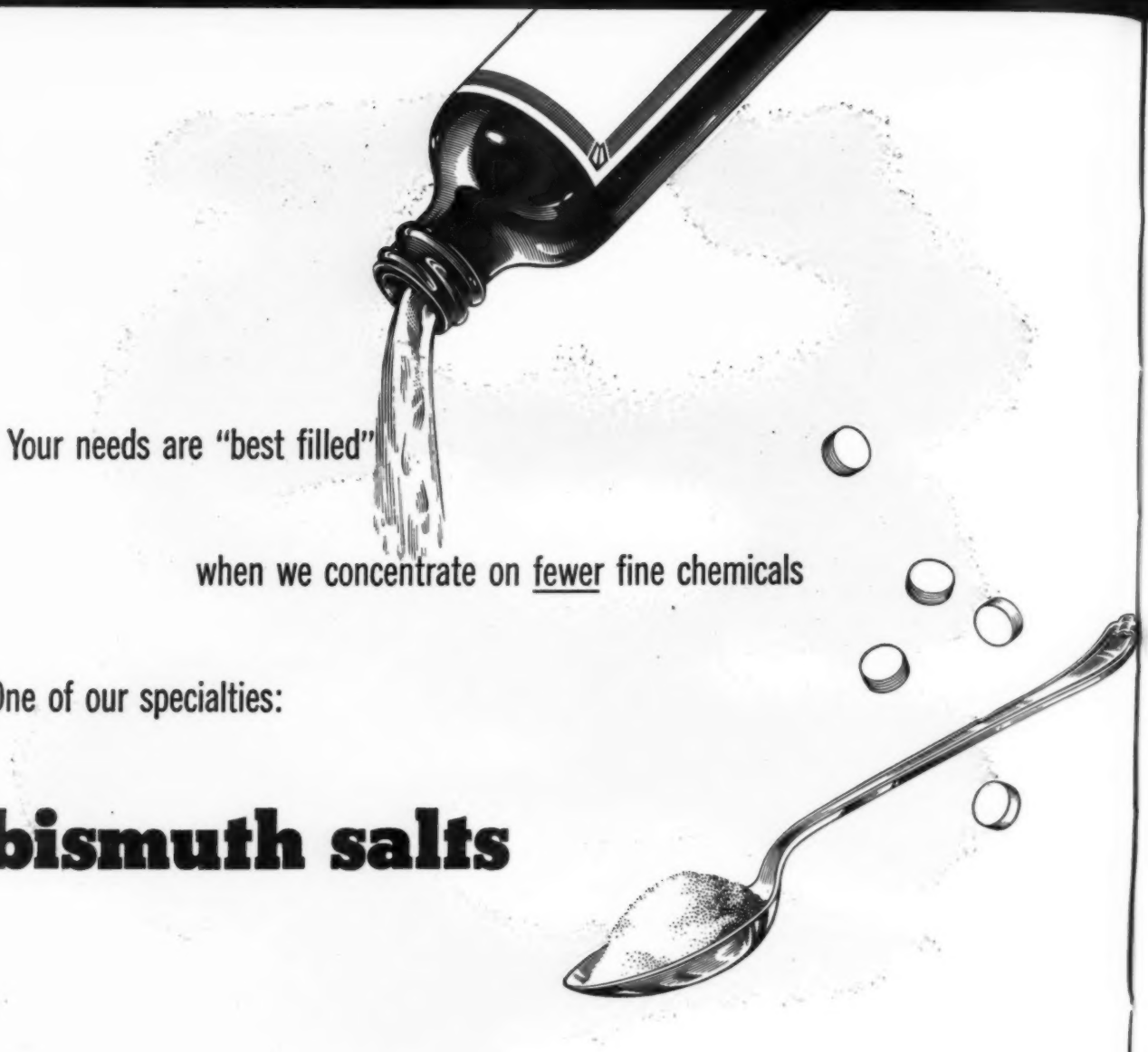
Noh Retires from Drug Field

Joseph G. Noh has resigned as vice-president and sales director of Winthrop-Stearns Inc., according to Dr. Theodore G. Klumpp, president, and has retired entirely from the drug field "to devote himself exclusively to the management of his family's private interests." He has been connected with the industry for 30 years.

He joined Winthrop-Stearns in 1945, having been associated with McKesson & Robbins, Inc. from 1929 to 1942. Prior to that, Mr. Noh had been executive manager of the Pennsylvania Pharmaceutical Association, professor of pharmacy at Purdue University, and associate professor of pharmacy and pharmacognosy at the New Jersey College of Pharmacy at Rutgers University.

During the recent meeting of the A.D.M.A. at Boca Raton, Fla., winners in the fishing contest were Mrs. George H. Schneller who landed a 32 lb. cobia, and Gerald F. Pauley (Monsanto), who landed a 7 ft. 2½ inch, 49 lb., 12 ounce sailfish. However, on the day after the convention people mostly went home, J. O'Neill Closs, executive vice-president of the A.P.M.A., landed a 7 ft., 5½ inch, 61½ lb. sailfish.

Posing with this latter fish are left to right: Mrs. E. N. Beesley; Mr. Beesley, president, Eli Lilly & Company; Mrs. J. O'Neill Closs; Michael F. Charley, A.P.M.A. president; Dr. Closs; Mrs. H. N. Wilkinson; and Mr. Wilkinson, vice-president, Abbott Laboratories.



Your needs are "best filled"

when we concentrate on fewer fine chemicals

One of our specialties:

bismuth salts

How can we "best fill your fine chemical needs" and help you maintain the precise standards you as a pharmaceutical manufacturer demand?

By producing many fine chemicals—or by concentrating on a few, making sure that each of them fits the job you have for them?

We have always felt that you could be served better, and in more ways, if we followed the latter course.

Let us see how you *gain* by using one of our specialties: Bismuth Salts.

Bismuth Subcarbonate, for example. Is your antacid preparation a liquid, a powder, a tablet? You can choose from Baker a Bismuth Subcarbonate that will "best fill your specific needs." We make *four* different densities.

Baker's Bismuth Subcarbonates, and Baker's Bismuth Nitrate, Subgallate, Subnitrate, Oxychloride, and Subsalicylate, are made from the purest grade of bismuth metal. A reagent grade of acid is used for the initial reaction. Color of these chemicals is exceptionally stable under exposure to actinic light.

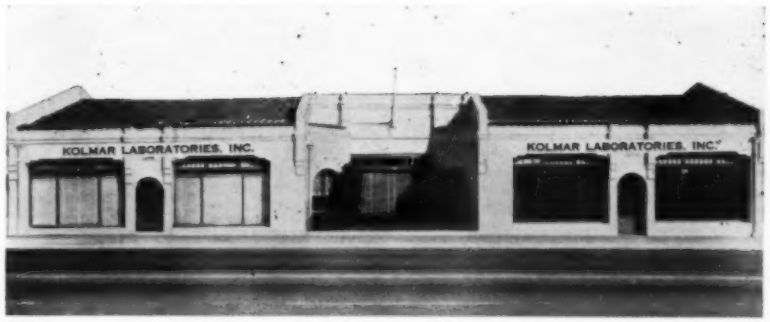
Samples and prices will be forwarded gladly upon request. Write to *Fine Chemical Division*, J. T. Baker Chemical Co., Phillipsburg, New Jersey.

Baker's Chemicals

C. P. ANALYZED • FINE • INDUSTRIAL

Kolmar in New Plant

Kolmar Laboratories, Inc., has acquired a new and much larger plant in Hollywood, Calif., at 1260-1266 N. Western Ave. These enlarged facilities will enable the company to serve clients on the West Coast more efficiently. Dick Kole is in charge of operations. The plant at Burbank will be discontinued.



New and larger plant of Kolmar Laboratories at Hollywood, Calif., which will enable company to serve clients on West Coast more efficiently. Dick Kole heads operations.

Eyre Retires from Winthrop

O. P. Eyre has retired from the special chemicals division of Winthrop-Stearns Inc., having completed 40 years of service to the pharmaceutical industry, according to Aaron Addelston, director. A dinner was held in his honor in Detroit, where he had been manager of Winthrop's special chemicals office. Among the guests attending were Charles B. McDermott, president of Winthrop-Stearns of Canada, Ltd.; Mr. Addelston; Del Blomgren, manager of Winthrop's professional service office in Detroit; and Oscar Naumann, midwest representative.

Receives Humanitarian Award

Arnold Perlman, president of Helene Pessl, Inc., recently presented Mrs. Vincent Impellitteri the first Humitarian Award, for her "outstanding philanthropic work in behalf of children. The award was made during the company's TV program, "Little Lady Story Time."

Leghorn, Pres. of Sun Tube

Kenneth M. Leghorn, executive vice-president of Sun Tube Corp., has been elected president of the company, succeeding R. Smith Schenk who has retired.

Mr. Leghorn joined Sun Tube in 1947, successively holding the positions of director of research, assistant to the president, vice-president, and executive vice-president.

Axler with Polak & Schwarz

Maurice M. Axler, with headquarters in Philadelphia, has been appointed by Polak & Schwarz as sales agent for their products in Philadelphia, Baltimore, Camden, Washington, Richmond and the eastern shore of Maryland and Delaware.

Fieldsteel with Pitman-Moore

Dr. A. Howard Fieldsteel, virologist, has been appointed to the research staff of Pitman-Moore Co., according to Kenneth F. Valentine, president. For the past three years he has held a fellowship in virology, sponsored by the National Foundation for Infantile Paralysis, at the Childrens' Hospital in Cincinnati.

Hoffmann-La Roche Appoints

Dr. S. H. Rubin has been appointed director of new products development by Hoffmann-La Roche Inc. Harold A. Ham has been named director of pharmaceutical production.

Carl J. Hasbrouck has been appointed director of the newly created animal nutrition division of Hoffmann-La Roche Inc. He had previously been associated with the University of Wisconsin Alumni Research Foundation and with the Animal nutrition division of the duPont Co.

Coleman with Aries

H. Roger Coleman, formerly of Evans Research & Development Corp., has joined R. S. Aries & Associates as development director.

Krajicek Joins Edwal Labs.

Joseph J. Krajicek was recently added to the engineering staff of Edwal Laboratories, where he will be concerned with plant design and maintenance.

Join Amer. Soc. of Perfumers

The following applicants were elected to membership at the quarterly business meeting of the American Society of Perfumers, Inc., held at the Advertising Club in New York on April 15: Arnold Beller, Centflor Mfg. Co.; Stephen G. Capkovitz, Colgate-Palmolive-Peet Co.; August F. Schwindeman, Dodge & Olcott; William A. Berhard, Pierre L. Bouillette, Alexander Jovanovich and Michael Lazorchak, Jr., of Givaudan Corp.; Herbert Perry, Perry Bros.; and Herbert Sommer, Prince Matchabelli.

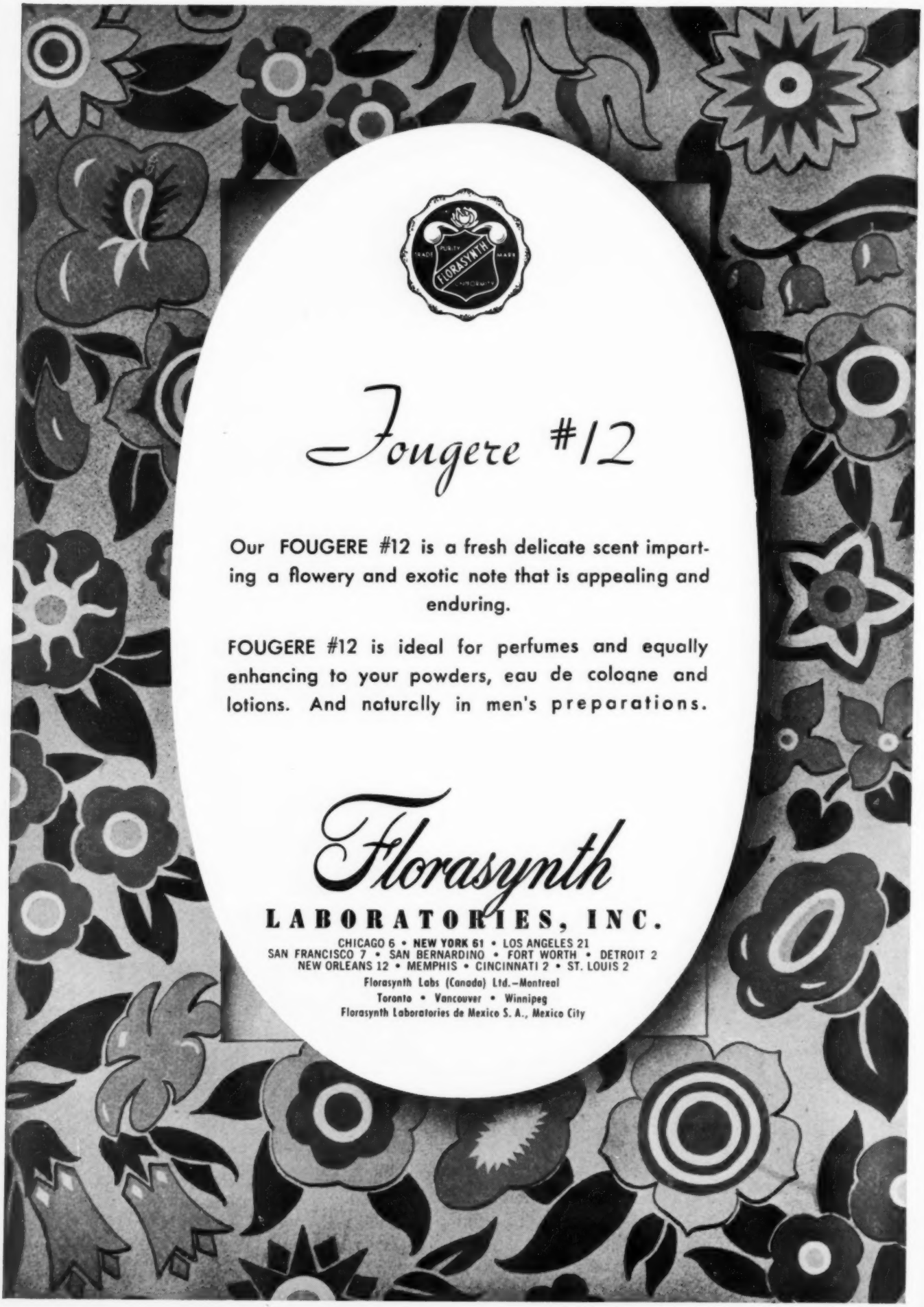
Named V. P., Endocreme Sales

George K. Sargent, Jr. has been appointed vice-president of Hirestra Laboratories, in charge of Endocreme sales. He has been a vice-president of the company for the past seven years.

KENNETH M. LEGHORN

CARL J. HASBROUCK

GEORGE K. SARGENT, JR.


FLORASYNTH
Fougere #12
Our FOUGERE #12 is a fresh delicate scent imparting a flowery and exotic note that is appealing and enduring.
FOUGERE #12 is ideal for perfumes and equally enhancing to your powders, eau de cologne and lotions. And naturally in men's preparations.
Florasynth
LABORATORIES, INC.
CHICAGO 6 • NEW YORK 61 • LOS ANGELES 21
SAN FRANCISCO 7 • SAN BERNARDINO • FORT WORTH • DETROIT 2
NEW ORLEANS 12 • MEMPHIS • CINCINNATI 2 • ST. LOUIS 2
Florasynth Labs (Canada) Ltd.–Montreal
Toronto • Vancouver • Winnipeg
Florasynth Laboratories de Mexico S. A., Mexico City

Packaged Lines Merged

The "Initial Line" of S. B. Penick & Co.'s packaged botanical drugs and New York Quinine & Chemical Works' line of packaged medicinal chemicals have been completely merged, according to the wholesale divisions of both companies.

This consolidation will give wholesale drug customers of both firms greater efficiency and simplicity of operation, as well as many worth-while economies. Wholesalers, according to the companies, may now write one order to include both lines; they will receive one shipment and one invoice, thus cutting routine work to a minimum.

Wholesale drug customers are now requested to address their orders to either company at whichever plant is desired: 258 Brunswick St., Jersey City 2, N. J., or 735 W. Division St., Chicago 10.

Bertrand Freres Moves Offices

Bertrand Freres, Inc. has moved to new offices and warehouse facilities at 443 Fourth Ave., New York 16, N. Y. The telephone number is now MUrray Hill 9-0760.

Koffenberger Promoted

James E. Koffenberger, sales promotion representative in the product promotion and sales training department, Eli Lilly & Co., at Indianapolis, has been appointed manager of the company's Memphis district.

Promoted by Sonneborn

Edgar E. Brand, assistant vice-president, L. Sonneborn Sons, has been elected vice-president by the board of directors, according to Dr. Ferdinand Sonneborn, president.

Rudolph Cubicciotti, formerly general manager, has also been elected vice-president. Dr. Henry Sonneborn 3rd, assistant secretary-treasurer, has been promoted to secretary.

Leon A. Danco, product director for Tartan suntan lotion (McKesson & Robbins), checking qualifications of Dorothy Dunne for the *Tartan Girl* who will be chosen by Ellington & Co. to star in a TV campaign.

Atlanta Drug & Chem. Club

The Atlanta Drug & Chemical Club held its monthly meeting on April 17, with the newly elected officers in charge. Discussions of activities for the coming club year were presented by President Sam Edwards, and by the new committee chairmen.

The new officers, in addition to Mr. Edwards, are Chas. B. Harrell, Jr., American Drug Fire Insurance, vice-president; J. C. Brown, Atlanta Economy Drug, treasurer; and John A. Raudonis, Eli Lilly, secretary.

Ansbacher-Siegle Changes

Carl A. Henlein has been transferred from the Chicago office of Ansbacher-Siegle Corp. and appointed southern district manager, with headquarters at 1214 Cherokee Road, Louisville, according to Eric B. Blackstead, vice-president.

Arthur E. Hedberg has been appointed midwest manager to operate from the company's Chicago office at 139 No. Clark St.

Join Squibb Advisory Council

Two prominent retail pharmacists, R. L. Brusenhan of San Antonio, Texas, and Wilfred Chagnon of Newton, Mass., have been appointed to the Squibb Advisory Council for four-year terms, according to W. L. Arscott, vice-president and sales manager, E. R. Squibb & Sons.

They joined the Council when it held its annual meeting with Squibb management on April 29 and 30, and May 1 in New York.

Yonkman Named Trustee

Dr. Frederick R. Yonkman, vice-president in charge of research for Ciba Pharmaceutical Products, Inc., has been elected to serve as a trustee of the Columbia University College of Pharmacy, according to M. A. Dittmar, secretary of the college. His 3-year term will begin in July.

On the teaching staff of the College of Physicians and Surgeons of Columbia, Dr. Yonkman is a director of the American Pharmaceutical Manufacturers' Association, as well as several other medical and scientific societies.

Brennglass, Purepac V.P.

Edwin N. Brennglass was recently elected a vice-president of Purepac Corp. He joined the western division at Los Angeles in 1948 as a chemist, later becoming plant manager of the Los Angeles plant.

Lever Executive Appointments

William H. Burkhart has been elected executive vice-president of Lever Brothers Co., a newly created position, according to Jervis J. Babb, president. John P. Moser, general manager, manufacturing division, has been elected production vice-president and will be succeeded by Gary G. Grany, formerly production manager.

EDGAR E. BRAND

RUDOLPH CUBICCIOTTI

DR. HENRY SONNEBORN 3rd.

Wherever orange oil is used EXCHANGE Brand is preferred

For the true aroma and flavor of fine California oranges, use EXCHANGE Oil of Orange in your products.

EXCHANGE orange oil is made entirely from selected oranges from the groves of sunny California. This finer fruit, plus carefully controlled processing, gives you an oil of unmatched fragrance and uniform performance.

Specify EXCHANGE Oil of Orange for complete satisfaction. This superior orange oil has been known for more than a quarter-century for quality and uniformity.

Sunkist Growers
PRODUCTS DEPARTMENT
Ontario, California

Produced by
THE EXCHANGE ORANGE PRODUCTS CO.
Ontario, California

Distributed in the U. S. exclusively by
Dodge & Olcott, Inc.
180 Varick St., New York 14, N.Y.

Fritzsche Brothers, Inc.
76 Ninth Ave., New York 11, N.Y.

NEIL GRACE

E. J. COSTA

Heads D&O Los Angeles

Neil Grace, former New York sales representative for Dodge & Olcott, has been appointed manager of the Los Angeles branch.

Parke-Davis Promotions

Charles A. Erdmann, assistant to the controller, Parke, Davis & Co., has been promoted to assistant controller, and Warren W. Ament, assistant to the treasurer, has been elevated to assistant treasurer.

Mr. Erdmann will serve under the direction of Harold W. H. Burrows, vice- president and controller, and Mr. Ament will be under the direction of David E. Mitchelson, treasurer.

G & W Moves into New Plant

G. & W Laboratories, Inc. last month moved into its new plant at 1-35 Ocean Ave., Jersey City, N. J., which will provide more than four times the capacity of its present facilities at 370 Ocean Ave. Formal opening took place April 26 when a reception was held for officials of the many drug firms for which G & W produces suppositories on a contract basis.

The company has also been selling suppositories nationally under its own Beatsol name, together with a Beatsol cold sore lotion and a Ped Athlete's foot remedy.

Brent with Reed & Carnrick

Dr. Bernard J. Brent has joined Reed & Carnrick as director of research. He was formerly director of the endocrine division of Warner-Hudnut, and previous to that, vice-president of Organon.

Robinson in Almay Advg.

Richard M. Robinson has been appointed to the advertising staff of the Almay division of Schieffelin & Co., according to Robert Spencer, advertising & sales promotion manager of Almay.

Kneip, Crown Cork Sales Mgr.

Walter J. Kneip, Jr., has been appointed sales manager, closure division, according to E. J. Costa, vice-president and general sales manager of the Crown Cork & Seal Co. He succeeds L. L. Lauve who will continue with the closure division as consultant.

Monday, Member of Rho Chi

Wilbur M. Monday, sales promotion manager of Hoffmann-La Roche Inc., has become a member of Rho Chi, honorary national pharmaceutical fraternity, Rutgers University Chapter.

Heads Walker Export Sales

Thomas P. Lewis has been elected vice-president in charge of the export sales of Walker Laboratories, Inc. He had formerly been assistant export manager with Chilcott Laboratories, and prior to that, assistant branch manager for Parke, Davis & Co. in Manila.

James Oliver Deegan

James Oliver Deegan, 58, president of Anchor Cap & Closure Corp. of Canada, Ltd., and a director of Anchor Hocking Glass Corp., Lancaster, Ohio, died April 4, at his home in Toronto.

He became associated with the Canadian firm in 1914 as a salesman and was elected director and treasurer in 1927, and vice-president and manager in 1930. He was subsequently elected president of Anchor Cap & Closure Corp. of Canada, Ltd., and a director of Anchor Hocking Glass Corp.

Mr. Deegan was also general manager of the Long Island City plant of Anchor Cap & Closure Corp. from 1938 until that plant was moved to Connellsville, Penna., in 1941.

Surviving are his wife, Evelyn Ethel Hinan Deegan; three sons, John Anthony, James Michael, and William Joseph; one daughter, Mary Eileen; and a sister, Mrs. Gladys Bogue.

David A. Bennett

David A. Bennett, 63, president of Albert Verley & Co., and one of the pioneers in the essential-oil industry, died April 19. He founded Albert Verley in 1926, and was instrumental in introducing Dr. Albert Verley's creations to the industry and promoting their use throughout the world.

Verley, and its subsidiaries, will continue all operations under the direction of Edward J. Strobl, executive vice-president, and Mr. Bennett's associate since 1927.

Georges Chiris

Georges Chiris, long associated with the management of Antoine Chiris Company, died last month at the age of 81. He withdrew from the business in 1932 but was obliged to return and resume the management of the factories during the war. His son later resumed management of the business.

During his association with the firm, Mr. Chiris developed the Algerian plantations in 1900 created by his father, and founded numerous companies in the French Empire. He also formed the English and American firms for the manufacture and distribution of aromatic raw materials in these countries.

Mr. Chiris also originated the manufacture of artificial silk, and he participated in the founding of numerous companies dealing in Viscose.

David W. Hutchinson

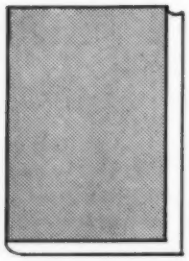
David W. Hutchinson, chairman of the board of D. W. Hutchinson & Co., died March 28 at White Plains, N. Y., at the age of 92. Having founded his own company in 1896, he was a pioneer in the essential-oil industry. Mr. Hutchinson visited the offices and plant of the firm every day, until recently.

He is survived by his son, Wallace Hutchinson, president of the company.

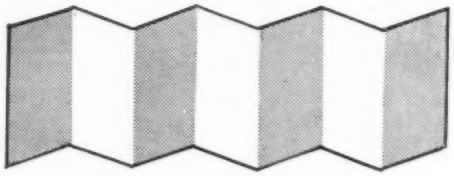
William A. Seiler

William A. Seiler, 61, purchasing agent, raw materials and containers, Calco Chemical division, American Cyanamid Co., died after a brief illness on April 22. He joined the Passaic Color Corp., Passaic, N. J., as office manager in 1924, and, after its acquisition by Calco in 1929, was in charge of purchasing raw materials and containers for the company.

He is survived by his widow; a son, Bruno Siler; and daughter, Mrs. Daniel Nebb.



Trade Literature



Antara Catalog

Antara Division of General Dyestuff Corporation, 435 Hudson St., New York 14, has issued a 28-page catalog covering such product groups as detergents, wetting agents, emulsifiers, brighteners, sequestrants, and dyeing assistants. Important application suggestions given for numerous industries including cosmetics.

Consulting Services, 1953

Association of Consulting Chemists and Chemical Engineers, 50 East 41 St., New York 17, has issued its silver anniversary issue of Consulting Services, 1953. This 14th edition, totaling 144 pages gives complete information on members' firms to those who are looking for consultants.

Filter Papers

Brosites Products Corporation, 50 Church St., New York 7, has issued a folder with samples descriptive of their Filtaweb line of industrial filter papers.

Emery Technical Bulletins

Emery Industries, Dept. 5, Carew Tower, Cincinnati 2, have issued two new technical bulletins. One is on a superior grade of azelaic acid, a C_9, saturated, dibasic acid, known as Emery 901-R Azelaic Acid.

The second is on Emery 892-R Pelargonic Acid, an improved grade of pelargonic acid.

Beckman Instruments

An inclusive 28-page catalog of Beckman ultraviolet and visible spectrophotometers—picturing all sample cells and other accessories—has been issued by Beckman Instruments, South Pasadena 1, Calif. Ask for Bulletin 303-63.

Handling of Boxes

The Logistics of Boxes, a colorful, 8-page booklet illustrating and describing the handling of boxes in load units, is available from Elwell-Parker Electric Company, 4205 St. Clair Ave., Cleveland 3.

Owens-Ill. Directory

Owens - Illinois Glass Company, Toledo, Ohio, has issued a full-color, illustrated booklet entitled, "A Directory of Owens-Illinois Glass Company Products." All products of the Company, its divisions and subsidiaries are described and beautifully illustrated.

Gum Arabic Bulletin

A Technical Service Bulletin (No. G-101) on gum arabic has been published by Morningstar, Nicol, Inc., 630 West 51 St., New York 19. The two-color, 4-page bulletin gives general information on the origin, physical and chemical properties, and mesh specifications of this widely used gum. Information, never before available, is contained in the profusely illustrated bulletin, according to the company.

Chlorophyll Research Story

The complete research story on chlorophyll and its derivatives is told in Chlorophyll 1953, by Dr. Walter H. Eddy, according to the American Chlorophyll Division of Strong Cobb & Company, Lake Worth, Fla., publishers of the book which will be sent free to interested manufacturers. This 60-page booklet is said to be the most comprehensive review of the authentic research literature ever undertaken.

Dow Booklet—Phenol

The Dow Chemical Company, Midland, Mich., has issued a 20-page two color booklet on phenol with complete information on the properties, uses, and handling of this important chemical. It is profusely illustrated with sketches, charts and graphs.

Paper Cyclopentadiene

Reprints of a paper entitled, "On the Reaction of Cyclopentadiene with Formaldehyde," by M. G. Beets and E. A. Drukker, have been issued by the Research Department of Polak & Schwarz, Hilversum-Holland.

Amyl Acetate Data Sheet

Commercial Solvents Corporation, 260 Madison Ave., New York 16, has issued Technical Data Sheet No. 15 on amyl acetate.

DRESSING UP makes the difference!

The 6-ounce Duraglas stock-mold bottle #A-4771, you see here, has an Empress closure. These Duraglas rounds offer a family range of ½-, 1-, 2-, 4-, 6-, 8- and 16-ounce sizes.

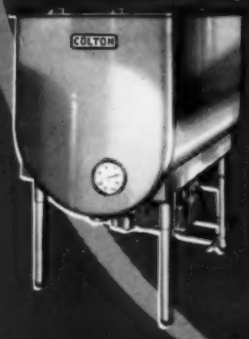
Sparkling glass . . . colorful closures . . . interesting label designs blended harmoniously create a salespackage that attracts attention.

May we submit our ideas for a Duraglas salespackage for your products?

Duraglas packages are protectors of quality

TRADE MARK REG. U.S. PAT. OFF.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES



A NEW member of a great old family of products . . .

STAINLESS STEEL TANKS by COLTON

Stainless steel is the ideal metal for practically every material—food, beverage, cosmetic, pharmaceutical—that requires sanitary, inert contact. These tanks are the finest that modern materials and methods can produce. Standard types include single wall, twin wall, vertical, horizontal, open tops with hinged covers, closed tops with manhole. Standard sizes range from five to five thousand gallons. Special types and sizes made to specifications. Optional equipment includes insulation, agitators, side and/or bottom pressure jackets for heating and cooling, all types of fittings. Low-cost, portable and built-in agitators of all kinds also available separately. Write for detailed specification sheets.

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Specialists in Pharmaceutical and Packaging Machinery for nearly 70 years

50% Saving

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with

COLTON MODERN OVENS

Granulations, effervescent salts and other pharmaceuticals are dried twice as fast in these new, high speed, accurately controlled ovens. Their remarkable efficiency is due to new design, new construction, new and positive uniform air circulating system. Low first cost and low operating cost make possible the recovery of entire oven investment in first few months of use. Special ovens to specifications. Write for detailed specification sheet.

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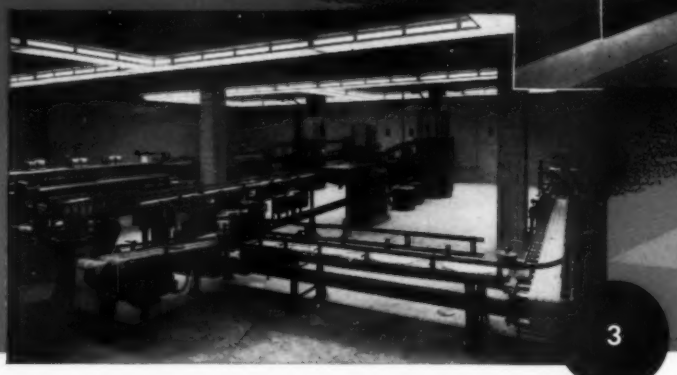
Specialists in Pharmaceutical and Packaging Machinery for nearly 70 years

UNTOUCHED BY HUMAN HAND

MIKROS process 10 TONS of MENNEN Powders Per Hour in New MENNEN Plant

2nd Floor: 2 MIKRO-COLLECTORS and 4 Dump Hoods. Ducts show MIKRO AIR CONVEYING SYSTEM. Collectors have a capacity of 7,000 cfm and handle 380 grains of material/cu. ft. of air.



Mezzanine: 4 Mixers, 4 MIKRO-PULVERIZERS and 2 Storage Tanks. Each Pulverizer grinds and blends 5,400 lbs/hr.

1st Floor: Showing cylindrical packaging units in background, [illegible] topped by MIKRO-AIRLOCK.

The name of Mennen stands for quality. So does the trade name MIKRO. It was only logical then, that the two should inspire the creation of a continuous processing system unique in the field of cosmetics, at the new Mennen plant in Morris Township, N. J. The MIKRO-designed process gave Mennen precisely what they wanted—extreme cleanliness and freedom from dust and contamination in grinding, blending and packaging. Material is moved through the MIKRO Air Conveying System so smoothly and automatically that the human hand need only push buttons.

The grinding and blending is done by four No. 2TH MIKRO-PULVERIZERS whose product reveals its finely ground and blended texture under a strong microscope.

Two MIKRO-COLLECTORS*, each containing 8, felt filter cylinders vent every unit in the system, while maintaining uniform pressure. Their phenomenal filter rates insure high capacity and complete product recovery, along with freedom from dust.

Thus the MIKRO method has given The Mennen Company not only the high quality they demand but peak production with economy in manpower, motorpower and maintenance.

WRITE FOR illustrated descriptive literature.

* Patents Applied For by H. J. Hersey, Jr. and Pulverizing Machinery Company

a134

MIKRO-PULVERIZER (FINE) MIKRO-ATOMIZER (ULTRA FINE) MIKRO-COLLECTOR (100 PER CENT)

REG. U.S. PAT. OFF.

PULVERIZING MACHINERY COMPANY

24 Chatham Road • Summit, New Jersey

PRESERVE OUR HERITAGE: FAITH, FREEDOM AND INCENTIVE

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Wells

Digging a well is always a gamble. Regardless of how carefully you study the geologic data of a given area there is always a chance you might miss the water vein. In one plant location project I insisted that the purchaser have the right to dig a well at his own expense before the purchase became final because the purchaser had to have vast quantities of cold water. In another case I did not insist on digging the well because the geologic tables showed vast quantities of water all over the area. Nearby there was a well less than two hundred feet deep which had a capacity of 750 gallons per minute. After the plant was erected we dug a well clean down to hell and gone and never struck a drop of water. We had to dig two other wells before we got enough water. Recently in building a new plant I thought it desirable to dig a well inside the building as a hedge against future need. The management agreed and appropriated $2,500 (ten dollars a foot). At one hundred five feet we struck water. And how! 300 gallons a minute of fifty degree water. We don't know how much more than that we have because the maximum capacity of the well driller's pump was 300 gpm and after five hours of pumping the water head did not drop as much as a sixteenth of an inch.

That's how it goes. In this case we don't need the damn water now so we've got plenty. In another instance I got an appropriation of $25,000 to drill five widely spaced wells because the geologists and the local well driller told us we'd never get more than 100 gallons of water a minute out of any one well even at 500 feet. The first well came in at 400 feet and yielded only fifty gallons a minute. This seemed to substantiate what we had been told. The second well came in at a little over 100 feet with a capacity of 450 gallons a minute. So we didn't need any more wells. This all goes to show that about water you never can tell.

Mining the Sea

I was interested to learn when I was in England last year that although the British Isles are set in the sea, there is no English firm that extracts chemicals from sea water, such as we have in this country. You'd suppose that since the sea is Britain's most plentiful natural resource, that she would be away ahead of us in using the sea as a source of wealth. England's greatness came from the sea originally—in a different sense of course—and it could come again for the resources of the sea are illimitable. England has a lot of old ships laid up in mothballs which could be used as floating chemical factories. A ship is a factory in every sense of the word. It has power and space for storage and equipment. What a chemical engineer's dream: to have a factory floating in its raw material supply; able to deliver its finished products anywhere in the world and to manufacture them in transit!

Branch Plant Operation

I don't suppose any management subject is given less sound thought than branch plant operation. In the drug and cosmetic industry most firms that have branch plants shouldn't have them. A branch plant can save only freight; it cannot perform sales service any better than a local warehouse. It has been my observation that these two factors are the deciding ones in establishing branch plants: to improve service of sales in the area and to save freight. As a general rule, as we have so often pointed out before, nobody computes accurately the cost of operating the branch plant against the freight saving. I say "accurately" because I have never seen a case where the most important cost factors weren't left out of consideration. The most important is of course the absorption of the overhead of the principal plant. Obviously if 25 per cent of the parent plant is transferred to a branch plant the overhead formerly absorbed by that 25 per cent must be absorbed by the remaining 75 per cent. But there are a lot of other expenses connected with branch plant operation that are commonly disregarded. For example: traveling expense from the parent plant to the branch; long distance phone calls from the home office to the branch; mailing expense and the cost of carrying larger inven-

Pres-O

is helping build sales of Aerosol products!

LOOK AT THESE Pres-O TOPS... Nothing else like them!

TILT-TOP For foam products: shaving cream, whipped cream, etc. Operated by tilting the top.

TOUCH-TOP For pérfumes, hair lacquers, insecticides, paints. For anything sprayable. Light finger pressure does it.

TWIS-TOP For spray or foam. Unit construction. Easiest to use. No parts to lose. A twist opens or closes it. No after drip or puff.

Pres-O #100 VALVE

has satisfied more than **Ten Million Users** on nationally advertised cosmetic products

Consumers say:

"Great! Self-cleaning. No clogging. Trouble-free and *stays that way!*"

Fillers say:

No leaks. No corrosion. Easier assembly after gassing saves time. Good for Crown cans, seamed cans — for any type of aerosol container. Permits filling by pressure *or* refrigeration. Comes for spray *and* for foam. Its fine appearance helps sales.

INVESTIGATE — Convince yourself that Pres-O will save you time — trouble — money — and will help boost your product's popularity and still wider acceptance.

SURE we'll work with you. Our engineers have the know-how. They'll style Pres-O to custom-fit *your* product. Don't delay. Write today, for full information.

OIL EQUIPMENT
Laboratories, Inc.
Bridge Street • Elizabeth, N. J.

tories. Don't kid yourself on the latter. You can't operate two plants, even with the same volume of sales, with the same investment in inventory that was possible when only one plant was operated. Then there is the factor of inter-plant shipments. It always seems that the branch plant runs out of something which the parent plant must supply and vice versa. Scheduling two plants is never as easy as scheduling one.

Yet there are times when a branch plant is justified quite apart from freight savings. Some times the volume transferred to the branch plant can be compensated for by the addition of more business to the home plant so that overhead absorption is automatically taken care of. Sometimes the establishment of a branch plant effects substantial economies in the purchase of raw materials.

The star example of the latter is the establishment of the Chattanooga plant of Butter laboratories. When Bob Cutter told me he wanted to establish an eastern plant I promptly told him he was off his rocker. But I was wrong. I didn't know that glassware costs 10 or 12 per cent more on the west coast then it does anywhere else in the country, even when purchased from the same glass company. This is of course due to the excessively high labor rates prevailing on the West Coast. Another factor that helped Cutter was the Korean war. The volume transferred from Berkeley to Chattanooga wasn't even missed. As a matter of fact the parent plant is now doing a larger business than it did before the establishment of the branch plant. And the branch plant itself had to be increased in size within eighteen months after it was put into operation.

When you have a situation like that there is no doubt about the advisability of opening a branch plant. But cases like this one are few and far between.

Trucking

I am still hepped on the idea that railroad rights-of-way could be used also as truck roads, thus enabling the railroads, through a toll system, to participate in truck revenue and at the same time remove the majority of trucks from our wornout and overburdened roads. The trucking companies could afford to pay tolls for nonstop operation on heavily ballasted roads with virtually no grades. They'd save gas, time and wear. What more could they want? I've talked this over with a couple of railroad presidents. They thought well of the idea and saw no engineering difficulties that would prove insuperable. Even the problem of paving betwen the ties so that the trucks could cross the tracks has been solved economically in many ways. But the railroad people are like bureaucrats. They are the most helpless lot of management people I have ever encountered. Their thinking is conditioned by a fear of state and federal laws, rules and regulations. It is, for example, an utter absurdity not to permit railroads to operate their own truck lines and steamship companies. The Canadian Pacific does in Canada. The rules and regulations that govern railroad operation in this country were drawn for a dead era when railroad buccaneers stole every thing in sight and used railroad properties as chattels to rig the financial markets. Railroad service could be four times as good as it is if the government would withdraw its dead hand from the throttle.

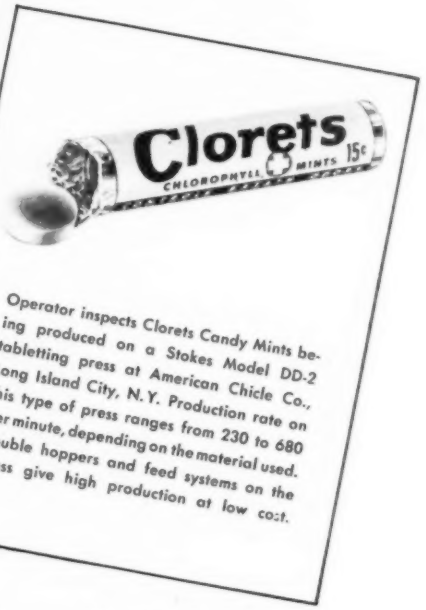
Honor Systems

A number of big companies are doing away with time clocks and putting their factory people on the honor system. I am urging my clients to do likewise because I'll be damned if I can see why factory people should be discriminated against. In the majority of cases office people are not required to ring time clocks but factory people are. Factory people are just as honorable as office people; in fact I think more so. When you consider the fact that some drug plants have more people by far in their offices than they do in their plants, I can't see why the time clock system should have held on so long. If time clocks are to be used they should be put into offices instead of factories, because I have observed more loafing, cheating and malingering in offices than I ever did in factories. Anyway offices, office work and office workers give me a pain in the anus. All offices are what the late Turner Currens used to call the "overhead department."

Royalty Contracts

So avid for new products are all manufacturers of drugs and cosmetics that they are often led into signing open-end royalty contracts on patented products or processes. The result is that many firms are paying through the nose to the tune of hundreds of thousands of dollars annually simply because management in its enthusiasm for something really new forgot one simple fact: that no product, however original it may be, is worth a fiddler's damn until it has won market acceptance. And the cost of securing market acceptance is invariably not only difficult to achieve but enormously costly as compared with the original research and development investment by the inventor. Indeed, the inventors did no development work at all. They merely had patentable ideas and obtained patents on them. But the ideas themselves were worthless until the products could be manufactured economically. This development work invariably costs the manufacturer a handsome sum before he can begin to put the product on the market. When the manufacturer begins to put the product on the market his expense really begins.

I have known many instances where manufacturers spent hundreds of thousands of dollars in developing and marketing patented products before substantial markets were established. During this time the inventors contributed nothing but complaints. Yet all the while the manufacturers were paying royalties on sales even though they were suffering substantial losses in their effort to put the product on the market. I have read many royalty contracts which not only contained no clause limiting the total amount of royalties the



Operator inspects Clorets Candy Mints being produced on a Stokes Model DD-2 tabletting press at American Chicle Co., Long Island City, N.Y. Production rate on this type of press ranges from 230 to 680 per minute, depending on the material used. Double hoppers and feed systems on the press give high production at low cost.

How Stokes Helped to Create a New Product

American Chicle Company, Long Island City, New York, one of the world's leading manufacturers of gums and candy mints, called upon Stokes Advisory Service to assist in the development of a new candy mint containing chlorophyll. Formulations were devised in cooperation with the American Chicle Co. laboratories . . . product tests conducted . . . supplies for market testing worked out with Stokes analysts . . . all of which led to a new product, Clorets Candy Mints, designed to keep breath "Kissing Sweet."

All equipment used in the manufacture of Clorets Candy Mints — for mixing, granulating, drying, and tabletting — is Stokes equipment. Every Clorets Mint turned out on the four Stokes Model DD-2 tabletting presses at American Chicle Co. meets the rigid quality control standards which this firm maintains. In addition to Clorets Candy Mints, the American Chicle Company also produces Chiclets, Dentyne, Beeman's, and Clorets Chewing Gums.

Stokes single-punch or rotary tabletting presses are adaptable to large or small production. A minimum of labor and servicing is required to operate these presses at maximum efficiency.

Send for Catalog No. 800, "Stokes Tabletting Presses", which pictures and describes tabletting processes, and for Catalog No. 600, "Stokes Pharmaceutical Equipment", which describes the complete line of Stokes pharmaceutical machinery now available.

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STOKES MAKES: High Vacuum Equipment, Vacuum Pumps and Gages/Industrial Tabletting, Powder Metal and Plastics Molding Presses/Pharmaceutical Equipment

inventors might receive but royalty payments were not even limited to the legal life of the contract.

There's only one way to halt inventors: Give them a fair minimum guarantee annually. Pay them a fair percentage of net sales. Place a maximum on the total amount of royalty to be paid whether it is paid in the first year or in several years.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Sweco Separator Bulletin

The Separator division of Southwestern Engineering Co., 4800 Santa Fe Ave., Los Angeles 58, has a new brochure which describes in detail, with illustrations, how the company's Sweco Separator works. In listing what the Separator offers, the booklet indicates that each screen cloth, held in uniform tension in all directions by an adjustable spring-tension mounting, is assured a long life. Additional advantages include low upkeep, less floating dust, no substructure vibration, adjustability, greater capacity, minimum power requirements, and economy. The range of materials handled by this separator, states the bulletin, is the broadest of any screen yet developed. Because it is efficient for wet or dry screening at much finer meshes than hereto possible, the Sweco Separator has broadened the field of application for screening in industries such as food processing, ore dressing, ceramics, chemical, sewage and waste disposal, petroleum, sand, gravel, pharmaceuticals and many others.

A copy of the Sweco bulletin may be obtained by writing the Southwestern Engineering Co.

Trioxane

Trioxane, a crystalline form of formaldehyde, is now available in commercial quantities. As the only source of completely anhydrous formaldehyde it offers many possibilities for the preparation of organic intermediates and resins.

This pleasant smelling solid burns with a steady nonluminous flame which gives no harmful vapors or sooty materials. It is used by the U. S. Army as the only standard field ration heating tablet and is adaptable to similar civilian uses with chafing dishes and camping kits.

With its cyclic ether structure this unique form of formaldehyde is an excellent solvent and reaction medium. In addition trioxane may be mixed with other organic compounds to provide solutions having powerful solvency. Other applications include trioxane's use as a stabilizer for trichloroethylene and zein solutions, a setting agent for protein materials, in the preparation of electroplating baths, photographic developers, air deodorizers and tanning agents and as a recoverable component in the azeotropic separation of hydrocarbon mixtures.

Physical Properties

Appearance	colorless crystals
Odor	ether-alcohol
Molecular Weight	90.08
Melting point, °C.	62
Boiling Point, °C.	115
Vapor Pressure, mm Hg. @ 25°C.	13
Specific Gravity, Molten @ 65°C/ 20°C.	1.17
Flash Point, tag open cup, °F.	113
Heat of Combustion, Kcal/g. @ 23°C.	3.96
Explosive Limits, per cent by volume in air	3.5 to 28.7
Heat of Sublimation, cal/g.	150
Heat of Vaporization, Kcal/mol @ 114°C.	9.8
Specific Heat, gram cal/g./°C.	0.22

Celanese Specifications

Trioxane Content, per cent min.	99
Melting Point, °C.	60-64
Acidity, as Formic, per cent by wt. max.	0.02
Iron Content, ppm. max.	2

The distinctive chemical and physical properties of Trioxane form the basis for many and varied applications. Molten Trioxane is an excellent solvent for many organic materials including phenols, naphthalene, fatty acid amides, zein, urea, polyvinyl acetate, ethyl cellulose and cellulose acetate. Its solvent powers for most of the organic materials with which it can react allow Trioxane to form homogeneous reaction systems with these materials, thus eliminating another solvent medium. Problems of mixing non-compatible substances are therefore avoided, and reaction rates are not limited by the extent of surface contact between the reactants.

Trioxane is finding increased use as a new and superior solid fuel for heating field rations of military forces in Korea and other theaters of operation. Selected by the Quartermaster Corp as the best fuel available, it has several marked advantages. Such properties make the use of Trioxane, incorporated into fuel tablets, attractive to campers, Boy Scouts and other outdoor groups. It is a convenient source of heat for home chafing dishes and as an aid in lighting fireplaces.

Anhydrous formaldehyde is often required for the preparation of organic intermediates and can be generated readily from Trioxane, its cyclic trimer. Although it is stable in the presence of alkalis, Trioxane can be depolymerized under acid conditions, releasing formaldehyde directly in the reaction flask at a controlled rate. The depolymerization may be terminated at any stage of the reaction by neutralization.

For use in a neutral or basic reaction, formaldehyde gas can be generated in an external system by depolymerization of Trioxane in a high boiling solvent.

LABELING THAT FAILS, AFFECTS YOUR *Sales*—

PEOPLE PREFER PERFECT PACKAGES-

Quality labeling means accurate register of the label, and laboratory controlled adhesive coating that keeps every part of the label *permanently* in place.

The *vacuum principle* of label handling, and the DRY labeling technique are exclusive features of New Jersey labelers, utilizing adhesives which are dormant in the label *until activated* when applied. It's a double-barreled guarantee of

PULLING POWER OF THE PACKAGE AT THE POINT OF SALE!

532

UP TO 150/m

NO GLUE — NO CHANGE PARTS

Ask for details!

NEW JERSEY MACHINE *Corporation*

AUTOMATIC LABELING • PACKAGING — PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

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MAIN OFFICE & FACTORY: 1520 WILLOW AVENUE, HOBOKEN, N. J.

The dry formaldehyde gas may then be introduced into the reaction vessel.

A convenient method of generating pure dry formaldehyde gas by the vapor phase catalytic depolymerization of Trioxane has been developed by the Celanese Petro-chemical Research Laboratories.

Since it is both a solvent and a source of anhydrous formaldehyde, Trioxane is of particular importance to manufacturers of phenolic resins. Trioxane readily dissolves phenol, and is especially effective with the difficultly soluble paraphenylphenol.

Trioxane is compatible with most phenols. With phenol itself, a solution is formed that remains liquid at room temperature and is indefinitely stable on storage, if kept neutral. It is then only necessary to add an acidic catalyst to initiate reaction. The rate of reaction and the nature of the resin depends on the amount of catalyst used.

Trioxane has been reported to be an excellent stabilizing agent for such chlorinated solvents as trichloroethylene, perchloroethylene and carbon tetrachloride. When these chlorinated solvents are used for vapor degreasing of metal parts, the addition of Trioxane inhibits the etching of the metal.

Trioxane inhibits the gelation of zein solutions; when a mixture of Trioxane and formaldehyde is used the best results are obtained. A zein solution containing six per cent Trioxane and 2.5 per cent formaldehyde is only slightly viscous after 184 days storage.

Besides plasticizing zein by its solvent action, Trioxane can be used to cure zein molding compositions. An acid catalyst is required to decompose the Trioxane and effect the curing. Made by Celanese Chemicals, 180 Madison Ave., N. Y. C. 16.

Potdevin Thermoplastic

Thermoplastic labels are growing increasingly popular for plastic, metal, fabric, glass packages, and other containers to whose surface it is difficult to adhere labels. The Potdevin Machine Co., 285 North Street, Teterboro, N. J., has just introduced a machine for activating delayed tack Thermoplastic Labels that provides efficient labelling of short-runs, and fits into long run production set-ups as well. The machine activates pre-coated labels quickly and evenly and delivers them to the operator for application to the product.

The Potdevin Activator is motor-driven permitting feeding of pre-coated labels in any quantity desired to supply one or more operators. Correct heat is maintained by a thermostatic control. Moving parts are few, minimizing maintenance. Constructed of heavy duty metal finished in gray crackle. Its small size makes it convenient for moving to any desired location. Made in two sizes, 6 and 12 inch widths for 110 volt, 60 cycle, A.C. operation.

New Filler

Packer Machinery Corp., 30 Irving Place, New York 3, N. Y., manufacturer of straightline, semi-automatic liquid filling machines announces the addition to its line of a filling machine, available in vacuum or gravity, equipped with a pneumatically operated filling head and electronic timing unit.

To operate, the operator presses a momentary contact switch and the filling spouts automatically lower into the containers and the product begins flowing. At the end of a predetermined amount of time, the timer clicks off and the spouts automatically rise to their original position. During the filling operation the operator makes ready another set of empty containers for filling . . . Under the previous method of filling, the operator manually lowers an operating lever, remains rooted at his position in front of the machine until the containers have filled and then manually raises the operating lever to stop the flow of the product. As it is necessary for the operator to stand at the machine waiting for the containers to fill, it generally requires another worker to prepare a set of empty containers for filling.

Bag Labeler

Claimed to be unequalled for consistently accurate, foolproof, high-speed labeling and sealing of bags is the recently perfected vacumatic heat sealing and labeling machine now being marketed by the Mercury Heat Sealing Equipment Co.

The Mercury Vacumatic Automatic Labeler and Sealer combines many noteworthy features. The machine feeds, folds and seals label and bag in *one automatic operation*, folding label exactly in half or short on one side and long on the other, as required. It is adaptable to label widths ranging from two to seven inches, and is the only labeler-sealer having an automatic vacuum label feed with a genuine vacuum pump.

The Mercury Vacumatic will automatically discharge labels uniformly and uninterruptedly down to the last label in the magazine. A vacuum control valve regulates speed of label release to accommodate varying bag weights and materials.

The versatile Mercury Vacumatic can also be operated as a straight sealer. It will heat seal cellophane, polyethylene, pliofilm and other heat sealing films and foils.

Write for Technical Bulletin VLS-12 or you can arrange for a demonstration in your own plant. The Mercury Heat Sealing Equipment Co., 331 N. Eleventh St., Philadelphia 7, Pa.

Potdevin Margin Gluer

A new Potdevin Ductor-Roller Margin Gluer, called Type MGA, has a small capacity tank to facilitate the handling of a wide variety of otherwise difficult coating agents. A tank cover can be provided which greatly aids in decreasing evaporation. It will apply 1/8" to 2" glue strip along the edges of a sheet without any glue oozing at the edges. The dry side remains clean. No adjustment is required for sheets of different size or shape. When a rectangular sheet is glued on more than one edge, the sheet is fed for each edge to be glued. No

Solve Your Container Cleaning Problems this way:

Whatever container cleaning method your packaging line may require, be it fully automatic, or semi-automatic, by compressed air or by rinsing, there is a U. S. machine to meet every requirement. Each machine is adaptable to unusual, specific needs.

The U. S. Sanitair is a fully automatic Air Cleaner that synchronizes into production lines. Due to exclusive mechanical innovations, this machine is meriting first call throughout the packaging industry. Has quick changeover for all container sizes. Handles AGST finishes, also aerosol valve type containers. There is a special model for wide mouth finishes, jars, etc. Write for Bulletins on any U.S. cleaning or filling machine.

U. S. BOTTLERS MACHINERY COMPANY

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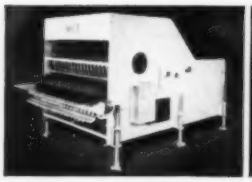

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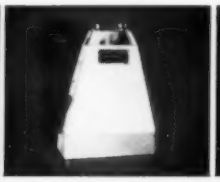

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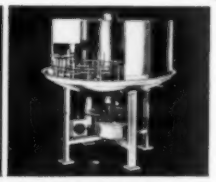

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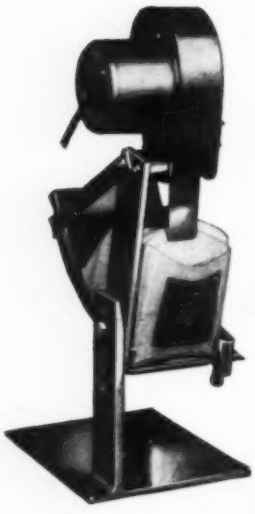

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Package Stitcher

Miles Laboratories, Inc. of Elkhart, Ind., has achieved an estimated 25 per cent increase in the output of individually packaged Alka-Seltzer tablets. A newly developed wire stitching machine, manufactured by Acme Steel Company, Chicago, permits more rapid and efficient preparation of the familiar blue and white display card for distribution to retailers throughout the world.

A new model stitching machine was developed to improve upon the existing method of stitching aluminum foil Alka-Seltzer tablet packages to fiberboard display cards.

The original wire stitching method was more than satisfactory. However, a change in packet dimensions required a change in the location of stitches. Adapting the original machine for stitching the revised packet produced a satisfactory method of stitching, but required repeated handling of materials. Therefore, the method of stitching was again revised, the packet-to-card assembly line was changed, rehandling of materials was eliminated, and the assembly line achieved a greater production output.

Originally, 24 pre-sealed packets were stitched to an 8 x 9-in. display card with a single stitch at top center of each packet. The card layout was arranged with two outer rows of nine packets and center row of six packets.

The need for more economical use of aluminum foil dictated the use of a smaller package. This could be done only by reducing the size of the sealed area forming the edges of each packet. However, a reduction in the size of each packet's sealed edge increased the possibility of a stitch puncturing the air-tight tablet compartment during the packet-to-card operation. Compartment puncture is undesirable because tablets exposed to heat and humidity tend to lose some of their beneficial qualities during extended periods of transit and storage.

The economical features of wire stitching, as a method of securing the packets to the .050-in. thick display cards, forbade consideration of any of the other available methods. Also, the familiarity of the existing display card was a desirable sales feature and precluded any change in card layout for dimensioning. Thus, to avoid compartment puncture, it was decided to relocate the stitches.

The new stitch positioning required placing two horizontal stitches at the top of each packet—one in each corner—with only one leg of each stitch passing through the .011-in. thick aluminum foil. Adapting the original stitching machines for the new stitch positioning produced machines capable of placing four stitches simultaneously. These four stitches secure two packets, one packet in each of two rows.

The resulting assembly line required three machines and a conveyor belt to process two display cards. The first machine stitched center-row packets on two separate cards which the operator then placed on the conveyor belt leading to the other two machines. Each of the other two machine operators took one of the cards from the conveyor, placed a single card in a machine and proceeded to secure packets in the card's two outer rows. Thus, three interdependent machines, each requiring an operator, processed two complete display cards of 24 tablet packages each.

This system had two drawbacks. The handling and rehandling of display cards between the first stitching machine and the other two was not desirable. Also, down-time for wire spool replacement or preventative maintenance on any one machine could impair the output of the packet-to-card assembly line.

James A. Foster, Sr., Development Engineer for Miles Laboratories went to work with Acme Steel Company engineers. Together, they developed a new model quadruple-head Acme Steel wire stitcher which holds two display cards at one time and automatically indexes to the next packet position after each set of four stitches is clinched.

Further, when one row of packets is finished, the operator depresses a foot pedal and causes the entire carriage bed to index to the next packet row. Thus, one operator at one machine can stitch all three rows of packets to two display cards in one continuous operation. Rehandling of cards between machines has been eliminated. Down-time on any one machine will not affect the remainder of the assembly line.

Constantly increasing demand for their product has prompted Miles Laboratories to replace all machines in this packaging line with the newer, independent type. As efficiency of this operation increases with more operator experience, the company expects the packet-to-card assembly line to achieve production output exceeding the 25 per cent already experienced.

Additional information about this wire stitcher may be obtained from Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

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Advancing Therapy

Thiamine in Dentistry

In the opinion of J. L. E. Bock (*U.S. Armed Forces Med. J.* 4:351, 1953), thiamine is an important therapeutic agent in dentistry, especially in the control and prevention of pain. From the physiologic viewpoint, the use of the vitamin is most desirable because it is a normal metabolic substance, the use a which is associated with a minimum of side reactions.

Bock has found that low-pain threshold is peculiar to those patients suffering from painful dental conditions and may be indicative of thiamine deficiency. Paralysis and paresthesia of nerves are greatly benefited by thiamine. He reports that dental postoperative pain is promptly and completely relieved in most patients by the administration of thiamine. Its prophylactic use materially aids in reducing the occurrence of postoperative pain. Therapeutic results are best obtained by its parenteral administration. In most patients dental pain is relieved promptly by the intraoral infiltration of 10 mg. of the drug, the results being equivalent to those obtained when 100 mg. are injected intramuscularly. The intraoral infiltration of thiamine invariably produces a transitory period of pain exacerbation which is directly proportional to the degree of pain already present. Hypersensitive teeth due to trauma, mechanical irritation, deep scaling and curettage, and operative dental procedures are greatly improved or completely relieved by thiamine. Hypersensitive teeth due to caries and erosion are not materially benefited.

Besides relieving pain, the healing time in dry sockets is greatly reduced by thiamine therapy. Neuralgia and neuritis of long standing in which various degrees of degeneration have occurred require prolonged and intensive thiamine therapy. Thiamine has a "curare-like" effect on muscle and relieves the tonic spasms of trismus.

In trying to explain the vitamin's action Bock states that it is not inconceivable that the loss of thiamine from the nerves is one of the major chemical factors in the production of pain. There is ample evidence that the replacement of free thiamine to injured and diseased nerves not only restores proper functioning but relieves pain. It is not desired to imply that thiamine is the sole factor concerned in the production of pain, but it is believed that it is of prime importance in nerve physiology and that it should be given whenever injury, disease, avitaminosis, or degeneration of the nerves is suspected.

New Penicillin

The discovery of a new type of penicillin, called Cephalosporin N, has been reported by E. P. Abraham, G. G. F. Newton, K. Crawford, H. S. Burton and C. W. Hale in the February 21, 1953 issue of *Nature*. The new penicillin is one of two antibacterial substances produced by a fungus of the species *Cephalosporium*. Cephalosporin N differs from common penicillins in its water-absorbing character and in its antibacterial activity. For example, it is equally active against a strain of *Staphylococcus aureus*, which causes boils, and against a quite different organism *Salmonella typhi*, that causes typhoid fever.

Myleran for Leukemia

The results of two years' trial of Myleran (1:4 - dimethanesulphonyl - oxybutane) in chronic myeloid leukemia has been reported by D. A. G. Galton (*Lancet* 1:208, 1953). The drug was given orally to 19 patients with this condition. In therapeutic doses Myleran depressed myelopoiesis without serious affecting other hemopoietic elements. All the patients responded initially to the treatment, but nine relapsed within 6 months. Eight patients obtained remissions of 21, 18, 18, 15, 14, 13, 10, and 6 months. The response in three patients who had received no previous treatment was comparable with the best results of radiotherapy. Five of nine patients for whom radiotherapy was not advised obtained useful, and in four cases outstandingly successful, remissions. In three patients the response to Myleran compared unfavorably with what might have been expected of radiotherapy, but excessive dosage may have been responsible by causing irreversible damage to the bone-marrow in one patient and by leading to drug resistance in the other two.

Thrombocytopenia is the only important side-effect but is unlikely to be serious if large doses (more than 10 mg.) are avoided, and if treatment is withheld when the platelet-count is below 100,000 per c.mm.

Terramycin in Dysenteric Amebiasis

In a discussion of current therapy of dysenteric and diarrheal amebiasis, W. A. Sodeman (*Amer. Pract.* 3:640, 1952) reports that studies of the effects of terramycin in the treatment of dysenteric amebiasis indicate that this drug may replace emetine. It controls the dysenteric phase promptly and is less toxic than emetine. Earlier ambulation is possible. Reports of similar results with aureomycin are discussed. With either drug it appears that, as in the case of emetine, parasitologic cure is not assured. Follow-up studies of the stools of the patients for reappearance of E. histolytica are indicated so that another amebacide may be given promptly if necessary.

Oral Fat Emulsions

Noting that clinicians have long been interested in the adequate nutrition of their patients, M. Shoshkes (*New England J. Med.* 247:1010, 1952) reports that emulsions of 40 per cent peanut oil in 10 per cent dextrose or sucrose, both unflavored or with added chocolate flavoring, with a caloric equivalent of 4 calories per cc., were administered to 200 unselected adult patients in need of extra calories. These patients were hospitalized for a wide variety of medical and surgical illnesses. One hundred and fifty-three of these subjects easily tolerated 125-cc. to 750-cc. daily doses of emulsion averaging approximately 200 cc. per day, administered usually by mouth, and also by tube feedings; 108 gained from 1 to 25 pounds over periods of study ranging from five to a 150 days. The chocolate-flavored emulsion was more acceptable than the unflavored and was tolerated slightly better. These

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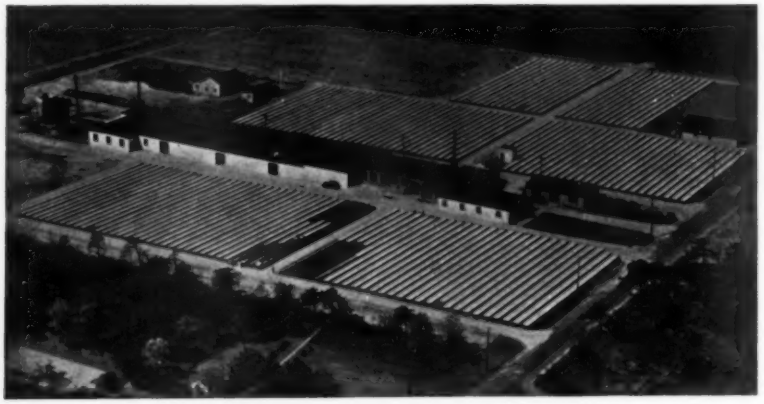

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fat emulsions were particularly useful in the treatment of peptic ulcerations, acute or chronic uremic conditions, in the caloric supplementation of wasting diseases correctible by surgery, such as thyrotoxicosis and localized cancers, in the supportive therapy of the patient with non-operable cancer and in complementing fluid - feeding and tube - feeding regimens. The caloric gains obtained resulted in significant therapeutic contributions to the clinical care of the patients.

Shoshkes states that the common symptoms of intolerance to the emulsions, experienced by 23 per cent of the total group, were sensations of epigastric distention or unpleasant heaviness, anorexia, nausea, vomiting or abdominal pains. These symptoms were minimized by the use of small introductory doses of 30 to 60 cc. of the emulsions, followed by gradual increments. However, the emulsions should not be administered to patients with biliary-tract calculi or severe gastric retention.

Antihistamines as Diuretics

The possibility that certain antihistaminic drugs may serve as diuretic agents is suggested in the findings of H. R. Litchfield, N. Bressler, M. Mazursky and I. J. Greenblatt (*Amer. Pract.* 4:104, 1953). During the treatment of an allergic condition in a child with nephrosis, it was noted that a rise in urinary output followed the administration of antihistaminics. The drug was given to several hospitalized children with apparently normal kidneys. The diuretic effect was confirmed in all cases. Histamine was also given to demonstrate its antidiuretic action. It is hoped that antihistaminics will prove effective in the treatment of nephrosis.

Trypan Red for Concussion

According to the observations of R. B. Aird, D. Zealear, L. S. Strait and M. Hrenoff (through *Science News Letter* 63:88, 1953), trypan red, a dye now used to treat some epilepsy patients, may be a good agent to combat the after-effects of head concussion. Their experiments have shown that the dye eliminates abnormal brain waves characteristic of the after-effects of concussion. Experiments also showed that it prevents disruption of the blood-brain barrier in concussion. The action of the agent in concussion apparently is similar to its action in epilepsy. The scientists had previously found that the dye offers some protection against epileptic seizures.

Oral Penicillin for Rheumatic Fever Prophylaxis

A five-year study of the prophylaxis of recurrences of rheumatic fever with penicillin has been described by K. H. Kohn, A. Milzer and H. MacLean (*J. A. M. A.* 151:347, 1953). They report that the oral administration of 800,000 units of penicillin daily for seven consecutive days the first week of each month was shown to be effective in significantly reducing the number of recurrences for three successive rheumatic fever seasons. The bacteriological results and the time of occurrence of the recurrences indicate that a routine monthly course supplemented by semimonthly courses in January, February, and March in the Chicago area offer as effective a means of prophylaxis as any reported in the literature thus far. Routine year-round prophylaxis of recurrences of rheumatic fever with penicillin orally is advocated.

Vasoconstrictors and Nasal Mucosal pH

The importance of the pH of nasal vasoconstrictors is emphasized in the report by N. D. Fabricant (*J. A. M. A.* 151:21, 1953). He points out that the normal nasal secretion, including the mucous blanket, possesses a purposeful acid barrier against infection, for it has been observed that acidity as reflected in low pH values is unfavorable to the growth of pathogenic bacteria and that nasal secretion possesses an acid composition when receding after allergic attacks. Thus the pH of nasal secretion in clinically normal adult nasal passages ranges from approximately 5.5 to 6.5, whereas in infants and young children it ranges from 5.0 to 6.7. During acute rhinitis, acute sinusitis, and the more active phases of allergic rhinitis, the pH of nasal secretion is found to be on the alkaline side, and then shifts back to the acid side when the stage of clinical resolution is reached.

Hence nasal vasoconstrictors with an unusually high alkaline pH value disturb the normal nasal pH level present in normal nasal passages and postpone the return of the nasal mucosa from a pathological alkaline status to a normal, slightly acid, status. During an attack of acute rhinitis, acute sinusitis, and the more active states of allergic rhinitis, the employment of a nasal vasoconstrictor that lowers the abnormal alkaline pH in these conditions to a normal, slightly acid pH level between 5.5 and 6.5 in adults or 5.0 and 6.7 in infants and young children—e.g., a physiological nasal pH—is most desirable in applied clinical practice. Fabricant's studies have shown that drugs with a pH range of 5.5 to 6.5 (as in the case of an appropriately buffered solution of one per cent ephedrine hydrochloride in isotonic sodium chloride solution), which approximate the normal range of nasal pH, do not markedly affect nasal pH.

Absorption of Erythromycin

The absorption of the new antibiotic, erythromycin, is discussed in two recent clinical reports. In the first of these discussions, L. E. Josselyn and J. C. Sylvester (*Antibiotics & Chemother.* 3: 63, 1953) state that their findings indicate that the absorption of erythromycin is affected by gastric secretions and that absorption probably takes place in the upper gastro-intestinal tract. Erythromycin given without protection or without an accompanying buffer is partially destroyed in the upper gastrointestinal tract. The destructive effect of gastric secretion may result from the action of acid or from digestive enzymes. In general, the data obtained in their study indicate that doses of 200 to 500 mg. of erythromycin will result in detectable concentrations in the blood. While the variation in blood levels among a number of subjects appears to be rather wide, the median values are satisfactory. Erythromycin blood levels which follow the administration of the antibiotic when it is supplied with a suitably formulated coating fall consistently within the range of the *in vitro* sensitivity of most susceptible microorganisms.

Josselyn and Sylvester observed that the blood levels which resulted from the administration of erythromycin with aluminum hydroxide gel were higher than those following administration of the specially coated tablet, when both forms were given before a meal. However, when given following a meal the specially coated tablet produced blood levels considerably higher than those observed when any of the other dosage forms tried was given at a comparable time.

Similarly, J. W. Smith, R. W. Dyke and R. S. Griffith (*J. A. M. A.* 151:805, 1953) observed that high gastric acidity destroys the drug and prevents absorption. This difficulty can be largely overcome by using tablets coated with an acid-insoluble, alkali-soluble substance. Patients with hemolytic Streptococcus infections (13 cases) and pneumococcus infections (7 cases) responded satisfactorily to treatment with capsules of erythromycin by mouth in doses of 300 to 500 mg. every six to eight hours.

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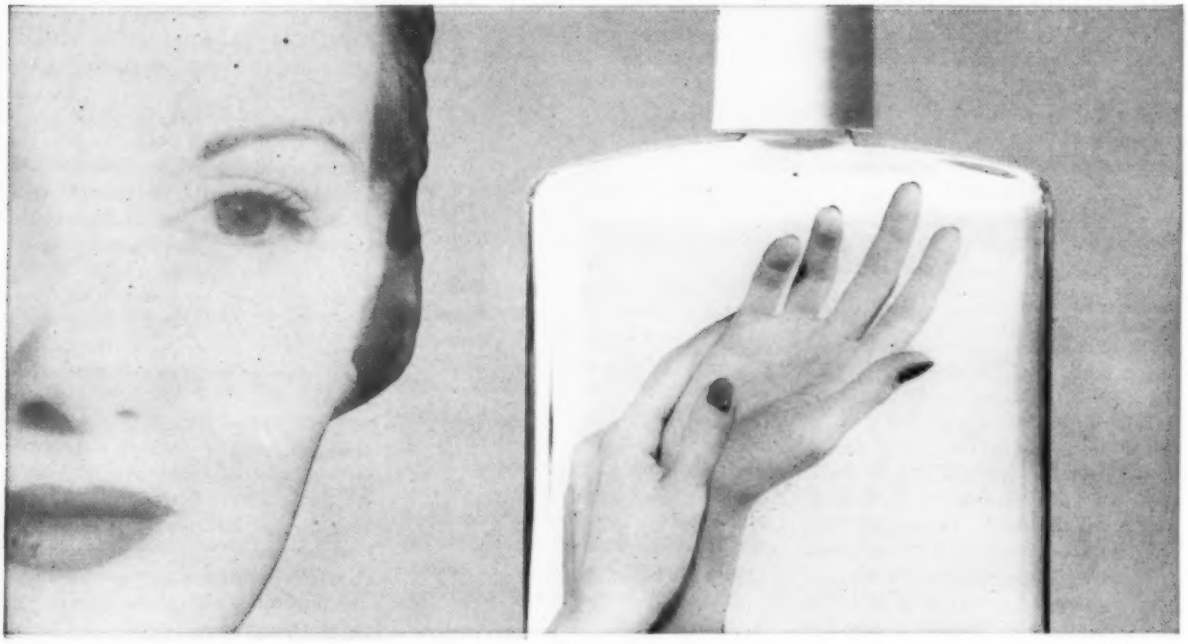

It's the soothing and softening effect without residual stickiness that determines a woman's preference when she buys a lotion. You can easily put your lotion on her preferred list by altering your formula, probably only slightly, to use propylene glycol, U.S.P.—with even a possibility of replacing a more expensive ingredient. Product improvement with lower cost sounds like a combination well worth investigating, doesn't it?

Propylene glycol can be used with all three types of cosmetic lotions—either nonalcoholic, mildly alcoholic or strongly alcoholic.

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Readers' Questions

CONCEALING SKIN BLEMISHES: I am interested in obtaining a formula for a preparation in order to cover patches originating through vitiligo, which as you know, is marked by loss of pigments on various shaped areas appearing on the hands, face, feet and neck. Buenos Aires.

A few years ago, A. W. Stillians suggested the use of a preparation such as the following for concealing skin blemishes. The base of this preparation is a bentonite jelly made by adding 10 Gm. of sifted bentonite to 75 cc. of stronger rose water, to which has been added 0.5 cc. of liquefied phenol. After a jelly has formed on standing, this is slowly added with trituration to 15 Gm. of the following powder, to make a smooth paste:

Red ferric oxide	**6 per cent**
Yellow ferric oxide	**8 " "**
Titanium dioxide	**86 " "**

The composition of the coloring powder can be varied according to the complexion of the individual.

NASAL JELLY: Will you please advise us of a good formula for a base for a nasal jelly? Philadelphia.

I think you will find that a typical nasal jelly can be patterned along the lines of ephedrine sulfate jelly of The National Formulary, which is given as follows:

Ephedrine sulfate	**10.0 Gm.**
Tragacanth	**10.0 Gm.**
Methyl salicylate	**0.1 cc.**
Eucalyptol	**1.0 cc.**
Dwarf pine needle oil	**0.1 cc.**
Glycerine	**150.0 Gm.**
Distilled water	**830.0 cc.**
To make	**1000.0 Gm.**

Dissolve the ephedrine sulfate in the distilled water, add the glycerine, the tragacanth, and the remaining ingredients. Mix well, and keep in a closed container for one week, with occasional agitation or mixing. To each 1000 Gm. of ephedrine sulfate jelly, 1.6 Gm. of sodium phosphate may be added as a stabilizer.

If a simpler preparation is desired, the following nasal jelly is indicative:

Ephedrine sulfate	**0.3 Gm.**
Tragacanth mucilage (3 per cent)	**20.0 Gm.**
Rose water	**10.0 cc.**

OILY NAIL POLISH REMOVER: Could you suggest a satisfactory formula for preparing an oily nail polish remover. Knoxville.

Ethyl acetate	**5 parts**
Dibutyl phthalate	**4 "**
Castor oil	**1 part**

BULKING AGENTS FOR OBESITY TREATMENT: I have been looking at your article on Obesity in the Drug and Cosmetic Industry *for August 1951 and, in particular, the section in which you deal with various bulk - producing, hydrophylic substances which swell and give a sense of fullness after ingestion with sufficient water. I would be very interested to know of any clinical work which has taken place on such subjects and am writing to you to ask if you would be good enough to give me any references to the literature on these products that you may have. London.*

The following reference was given in this section of my article: Jonas, A. D.: Amer. Pract. 1:933, 1950. Another source of information that may be of value is as follows: Hoelzel, F.: Am. J. Digest. Dis. 14:401-4, 1947.

LANOLIN HAIR DRESSING: Please send me a formulation for a lanolin hair dressing, one that can be produced inexpensively. Camden.

A typical procedure for making a lanolin hair dressing calls for the use of:

Petrolatum	**7.5 per cent**
Mineral oil	**37.5 " "**
Lanolin, anhydrous	**3.0 " "**
Sorbitan sesquioleate	**3.0 " "**
Beeswax, white	**2.0 " "**
Borax	**0.5 " "**
Water, to make	**100.0 " "**
Perfume	**Sufficient**

Mix the first five ingredients and heat to 75°C. Dissolve the borax in the water and bring to the same temperature. Add the borax solution to the previous mixture slowly with moderate but thorough agitation. Perfume 45°C. and agitate until cold.

Perfumer's Shelf

Artemisia Coerulescens

A report on the constituents of *Artemisia coerulescens* has been made by D. Markovic, F. Benzinger, M. Porges and B. Srepel (*Acta Pharm. Jugoslav* 2:39, 1952 through *Chem. Abstr.* 47: 822, 1953). From samples of the plant grown on the northern, middle, and the southern Adriatic Sea coast, these workers isolated four crystalline substances melting at 81°, 203°, 215° and 236° C. The flower heads contained 2.5 per cent of volatile oil. The oil from the northern Adriatic coast had the following properties:

Specific gravity	**0.915**
Specific rotation	**−2.7**
Index of refraction	**1.4572**

The volatile oil from plants from the middle Adriatic coastal plants had the following characteristics:

Specific gravity	**0.9752**
Specific rotation	**29.4**
Index of refraction	**1.4851**

Infusions of 1.0, 0.5, and 0.25 per cent of the flower heads showed the same effect on earthworms and leeches as similar infusions of wormseed (*Artemisia cina*), but of lower intensity.

Ambergris and Clary Sage

In presenting the Fritzsche Award Address to the 123rd meeting of the American Chemical Society, M. Stoll of Fermenich & Cie, Switzerland, stated that ambergris contains a large percentage of nonvolatile or barely volatile products, having no significant odor, together with a very small quantity of quite volatile, strongly fragrant materials. The production of ambergris being haphazard and limited, little work on the isolation of components has been done. Ruzicka and his coworkers succeeded in isolating only a single product, γ-dihydroionone. Clary sage has been known for a long time to have a distinct amberlike odor, but degradation of this material did not reveal any products with a significant, characteristic scent. Stoll has made efforts to obtain from sclareol oxide a hydroxy aldehyde which he hoped would form an enol oxide. This was not the case, and instead, a dimolecular sesquiacetal was formed. Reduction of the ozonide of sclareol oxide gives a glycol which can be dehydrated to a strongly amber scented epoxide, thus opening a way for the possibility of finding a similar epoxide in the volatile part of natural ambergris.

Preparation of Thyme

Various methods for the extraction of thyme were investigated by K. Norstig, M. Ostenson and I. Ostholm (*Svensk. Farm.* 56:477, 1952) and compared with the Swedish Pharmacopoeia XI method. The best procedure for the extraction and preparation of syrup of thyme was found to be as follows: Moisten 1,000 Gm. of powdered *Herba thymi vulgaris* with 500 Gm. of 30 per cent alcohol. Pack in a percolator and add 2,500 Gm. of 30 per cent alcohol. After standing for two days, a continuous slow percolation is begun until 2,500 Gm. of percolate is obtained. A second 2,500 Gm. of percolate is obtained by the addition of water instead of alcohol. For the preparation of the final syrup, 5,000 Gm. of sugar was dissolved in the second percolate which was then mixed with the filtered first percolate.

Preparation of Menthyl Acetate

A note by C. E. Miller (*J. Am. Pharm. Assoc.*, Scient. Ed. 41:679, 1952) presents a procedure for preparing *l*-menthyl acetate; this compound to be used in an improved method for determining menthol in peppermint oil. In his method, 52 Gm. of menthol was placed in a 500-cc. three-necked flask fitted with a dropping funnel, a thermometer, a 30-cm. helice-packed, column arranged for distillation, and a Glas-Col heating mantle. Thirty-four Gm. of isopropenyl acetate was added and a partial liquefication of the menthol occurred, together with a marked endothermic reaction, the average temperature drop being about 15°. The mixture was heated to 45° and three drops of sulfuric acid was added. The acetone formed in the reaction was continually removed by distillation, and the heating was continued to a still pot temperature of 180°. The resulting crude menthyl acetate was then fractionated through a 60-cm. helice-packed column with a total condensation partial take-off head. The yield of ester boiling at 109-110° (10 mm.) was 62 Gm. (91 per cent of theoretical). The following constants were determined:

Specific gravity	**0.9222**
Index of refraction	**1.4461**
Specific rotation	**−76°.19′**

The compound was soluble in 4 cc. of 70 per cent alcohol and 9 cc. of 65 per cent alcohol.

Gum Turpentines of Pine

A report on the composition of gum turpentines from *Pinus oocarpa* and *P. pseudostrobus* var. *oaxacana* from Chiapas and *P. cooperi* from Durango has been made by P. M. Iloff, Jr. and N. T. Mirov (*J. Am. Pharm. Assoc.*, Scient. Ed. 42:46, 1953). Thus, they found that the turpentine from *P. oocarpa* consists of about 68 per cent *d*- and *dl*-α-pinene, 22 per cent *l*- and *dl*-limonene; and seven per cent sesquiterpene, most of which is *d*-longifolene. The gum turpentine of *Pinus pseudostrobus* var. *oaxacana* contained 21 per cent heptane; 51 per cent *d*- and *dl*-α-pinene; 15-16 per cent *l*- and *dl*-limonene; 1.3 per cent *n*-undecane; and 7.5 per cent *d*-longifolene. The turpentine of *Pinus cooperi* contains 56 per cent *d*- and *dl*-α-pinene; 39-40 per cent *l*-β-pinene; and three to four per cent unidentified higher boiling material.

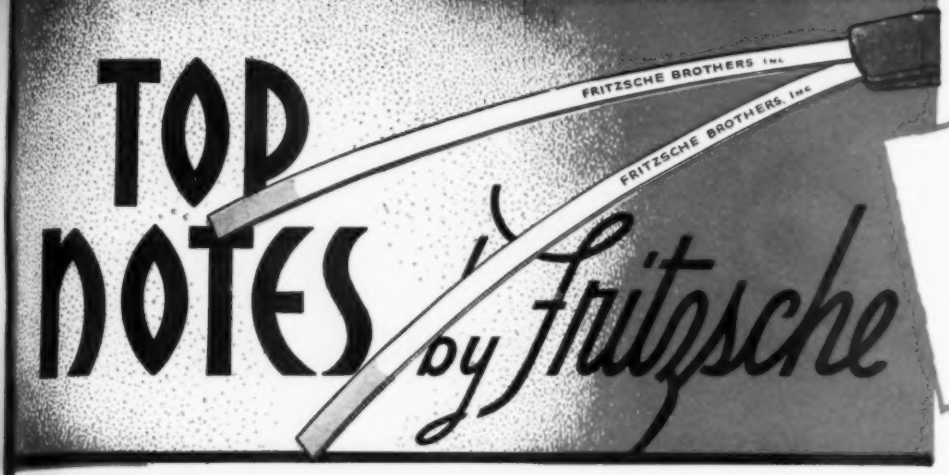
Essential Oil of Ruta Chalepensis

A. F. Costa and J. C. doVale (*Noticias farm.* 18:19, 1952 through *Chem. Abstr.* 47:1901, 1953) report that the essential of *Ruta chalepensis*, subspecies bracteosa, a plant that grows wild in Portugal, had the following properties:

Specific gravity	**0.839**
Specific rotation	**+1°**
Index of refraction	**1.4329**
Ester number	**3**

The oil contained over 90 per cent of ketones, principally methyl nonyl ketone with some methyl heptyl ketone, together with very small amounts of a

TOP NOTES by Fritzsche



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FLOWER of the Month

April—Sweet Pea
or Daisy

May—Lily of the Valley or Hawthorn

RECOMMENDATION of the Month

Neutral Fixative

(S-167)

This product has worked out very successfully in the pretreatment of alcohol intended for use in perfumes, toilet waters or colognes. It neutralizes the odor of the alcohol and acts as a fixative for the perfume with no perceptible interference with the character of its fragrance. It eliminates the odor of alcohol as a negative factor to consumer acceptance. Accomplishes this desirable result at the low cost of 3¢ per gallon of finished product. Priced at $45.00 per lb; $1.00 for trial ¼ oz.

MAYBE YOU KNOW HIM . . .

WARREN ROWLAND GODFREY came to us in 1936 from Buffalo where he had been Production Manager of a bottling plant. With a wife, a 4-year old son and ambition aplenty, young Godfrey had other "bees in his bonnet" besides Buffalo and the bottling business. Fritzsche seemed to present a more promising field for his capabilities and he decided to chance the change. Today, seventeen years later, he's happy that he did. His then 4-year old is now 21 and majoring in journalism, while a second son, 16, is in high school. As Manager of the busy and growing Philadelphia Sales Branch in the City of Brotherly Love, Warren finds time to indulge the hobbies he likes best . . . wood working, fishing, reading biography and playing an enthusiastic, albeit unphenomenal game of golf. Quietly persuasive, logical and imperturbable, Warren Godfrey is the sort of salesman top buyers welcome when their flavor, essential oil or aromatic supply problems appear most aggravating.

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*St. Louis, Missouri, *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

A THOUGHT for the Month:

"Humidity makes plants grow; humility makes men grow."

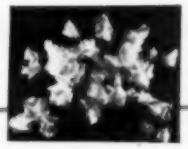
— AUTHOR UNKNOWN

Good Scents

FOR PERFUMERS

READY TO HELP YOU

YES, ready and willing. And because two heads are usually better than one, we'd like to put our collective heads together with yours and find out if there isn't some way we can help you in the creation or improvement of your perfumed products. Many a small firm has been helped to grow large in just this way. Often lacking the necessary facilities and technically trained personnel essential to the development of worthwhile competitive products, these firms have given us their ideas and have let our very competent staff of fragrance specialists work out formulation and manufacturing details for them. This important part of FRITZSCHE service is available to any manufacturer who concedes, as we do, that *two heads ARE better than one!* From such, we cordially invite inquiries.

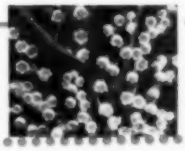


TWO FLORAL GROUPS

The following fragrances may be used alone or in combination with other perfumes to produce a pleasing and somewhat modified effect:

SWEET PEA I-057 *(For Bath Powders and Talcums)*	**$6.00 lb.**
SWEET PEA O-580 *(For Face Powders)*	**$4.25 lb.**
SWEET PEA S-601 *(For Bath Salts)*	**$4.25 lb.**
SWEET PEA L-017 *(For General Cosmetics)*	**$6.00 lb.**
SWEET PEA H-316 *(For General Cosmetics)*	**$50.00 lb.**
LILY of the VALLEY J-143 *(For Sachets and Lotions)*	**$25.00 lb.**
LILY of the VALLEY K-298 *(For Creams and Lotions)*	**$22.00 lb.**
LILY of the VALLEY N-468 *(For Hand Creams)*	**$4.00 lb.**
LYLIUM "A" *(For General Cosmetics)*	**$30.00 lb.**
LYLIUM "B" *(For General Cosmetics)*	**$15.00 lb.**

WE'LL SEND YOU ½ ounce samples each of any three fragrances you may select from the above list if you'll fill in and mail us the attached coupon with check or money-order for $1.00 to cover the cost of handling.



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76 Ninth Ave., New York 11, N.Y.

Gentlemen: For $1.00 (check or M.O.) attached, please send me, prepaid, ½ oz. bottles of each of the THREE perfumes checked herewith:

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TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... **ZONE** ..... **STATE** .....

- ☐ I-057
- ☐ O-580
- ☐ S-601
- ☐ L-017
- ☐ H-316
- ☐ J-143
- ☐ K-298
- ☐ N-468
- ☐ LYLIUM "A"
- ☐ LYLIUM "B"

DETERMINING THE REFRACTIVE INDEX OF AN ESSENTIAL OIL

THERE'S A LOT of satisfaction in knowing that the merchandise you buy is as good as can be made, whether it be the garments you wear, the foods you eat or the furnishings that equip your home. Similar satisfaction derives from the raw materials that help make a finer finished product. Certainty that his basic ingredients are reliably superior gives immediate advantage to the manufacturer using them. Pride, satisfaction, confidence—these are reflected and carried on in many ways, from sales and advertising, through wholesale and retail outlets, on and on to the final consumer. Thus, the importance of quality in one's starting materials is very far-reaching. It is because of its importance that so much of our effort is directed toward the careful selection and control of ALL materials that enter our plant. It is why tests like that illustrated above are an essential part of our Quality Control Laboratory's daily routine.

FRITZSCHE *Established* 1871

Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* °STOCKS: *Atlanta, Georgia, Boston, Massachusetts, °Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, °Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, °St. Louis, Missouri, °Toronto, Canada and °Mexico, D. F.* FACTORY: *Clifton, N. J.*

• MEMO •

To: PHARMACEUTICAL MANUFACTURERS WHO HAVE PROBLEMS INVOLVING FLAVORS

From: FRITZSCHE BROTHERS, Inc.

Subject: FLAVORING "KNOW-HOW"....THE KEY TO IMPROVED PALATABILITY

These words are directed to manufacturers who have problems involving flavor....which is to say ALL proprietary and pharmaceutical manufacturers, because sooner or later, most of them do have problems of unpalatability to overcome.

In the past, manufacturers went little beyond the simple technique of the corner druggist who made his less pleasant tasting prescriptions more acceptable by the addition of stock flavors like cherry, peppermint or honey.

Today, that practice is being changed. The emergence of spectacular discoveries and amazing new products from the research laboratories of this great industry has produced a remarkable change in the attitude and thinking of its members. No longer does the archaic device of a receding past serve the needs of current progress.

In no division of pharmacy is this more evident than in the manufacturers' employment of flavors. The old standbys of yesterday are rapidly giving way to newer, better and more efficient flavors....flavors developed specifically - and scientifically - to do an individual and particular job.

And here, the need is for unlimited flavoring "know-how", - a kind of knowledge built upon long experience and complete familiarity with an incredible variety of basic raw materials. Not the sort of knowledge one acquires overnight!

And so, for the important task of making the fine, ethical products of modern pharmacy more palatable to the user's taste, many of the foremost manufacturers are having their flavor research requirements fulfilled more quickly, more satisfactorily and more economically by their reliance on FRITZSCHE — specialists in the art of flavoring since 1871.

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large number of other compounds commonly found in essential oils.

Sandalwood Oil from Timor

C. Scholtens (*Ind. parfum.* 7:205, 1952) reports that the oil distilled from the sandelwood (*Santalum album*) grown in Timor did not show any significant differences in specific gravity, index of refraction, rotation, or solubility in alcohol from the commercial oil produced in Mysore. However, the Timor oil contained 90 per cent total alcohols, calculated as santalol, and had a superior odor as compared to the Mysore oil.

Separation of Cineole

A process for separating cineole from plant essential oils is described by H. Okuda in Japanese patent number 1172 (through *Chem. Abstr.* 46:7716, 1952). In his method, 9,000 Gm. of white camphor oil containing 21 per cent of cineole is mixed with 1,890 Gm. of 2-naphthol at 40 to 50° C., then cooled to −15° in ten hours, and centrifuged to give 3,360 Gm. molecules of a compound of cineole and naphthol and 2,710 Gm. of oil. The compound and 5,210 Gm. of 10 per cent sodium hydroxide are stirred at room temperature and the oily layer floating on top is steam-distilled to yield 1,764 Gm. of 90 per cent pure cineole. The oil and 850 Gm. of 10 per cent sodium hydroxide give 6950 Gm. of camphor oil containing 3.9 per cent of cineole. The sodium hydroxide solution, after removal of the cineol-naphthol compound and camphor oil, is neutralized with 2,500 Gm. of 30 per cent sulfuric acid, filtered, and washed with water to give 1,840 Gm. of 2-naphthol of 97.3 per cent purity.

Basil Oil from Tanganyika

A sample of oil, said to have been distilled from the immature inflorescences of *Ocimum basilicum*, grown in Tanganyika, has been examined by E. Brown and W. S. A. Matthews (*Colonial Plant & Animal Prod.* 3:57, 1953). The oil, consisting of a clear, sediment-free, very pale yellow oil, had the following properties:

Specific gravity at 15.5° C.	**0.9605**
Optical rotation at 20° C.	**+1.55°**
Refractive index at 20° C.	**1.5180**
Acid value	**0.1**
Ester value	**3.7**
Ester value after acetylation	**14.3**

The oil was soluble in 8.0 volumes of 80 per cent alcohol with slight opalescence. It became clear on dilution to 10 volumes.

This study showed that the sample of basil oil from Tanganyika contains only a small proportion of alcohols and that its composition is very similar to that of Reunion basil oil. It is considered unlikely that it would be able to compete with French basil oil, but there is little doubt that oil as represented by the sample could be used in place of Reunion oil. It would, however, probbably command a lower price.

Spanish Broom Concrete

The concrete obtained in 0.09 to 0.18 per cent yield by cold light petroleum extraction of Spanish broom (*Spartium junceum, L.*) has been examined by Musgrave and his associates (*J. Chem. Soc.* 1952, p. 4393). This was treated with alcohol to give an absolute and an alcohol-insoluble wax. The wax was saponified, and the unsaponfiable matter was separated into two portions respectively insoluble and soluble in cold ether. The former was separated by chromatography on alumina to insaturated paraffins (believed to consist of *n*-nonacosane, 60, and *n*-hentriacontane, 40 per cent) and saturated alcohols with an average chain length of 24 carbon atoms. The ether-soluble fraction was similarly separated into a mixture of paraffins and a mixture of alcohols, both similar to those described above. In addition, a mixture of triterpenoid alcohols (including some β-amyrin) and β-sitosterol was isolated.

The absolute, which was soluble in ether, contained 46 per cent of free fatty acids. The neutral fraction (20 per cent of total) was chromatographed on alumina, and the following were identified: an optically inactive, saturated alcohol, $C_{22}H_{44}O$ or $C_{23}H_{46}O$, melting at 65° to 66° C., believed to be tertiary; a mixture of alcohols including α-amyrin, β-amyrin, δ-amyrin (isolated from a natural source for the first time) and lupenol; a mixture of C_{24} alcohols; an unsaturated alcohol, $C_{16}H_{32}O$, with one double linkage; β-sitosterol; *n*-octadecane-1:18 diol; and another diol, $C_{26}H_{54}O_2$, identified as *n*-hexacosane-1:36 diol.

English Peppermint and Lavender Oils

In expressing various opinions and facts concerning several English essential oils, G. E. Smith (*Perf. & Essent. Oil Rec.* 43:445, 1952) remarks that, of the individual oils, the most important is peppermint oil. He points out that *Mentha piperita* is a native of Great Britain and that all of this plant grown commercially in the U.S.A., the U.S.S.R., France, Italy and other countries is derived from English or Scotch plants; but none of the peppermint oils produced in these countries compare in quality with the oils distilled in England from English grown plants. However, chemists are still ignorant of the chemical reason for the superiority of English peppermint oil. As with most essential oils the main analyzable constituents merely form a base or background upon which th quality is superimposed by unknown or partially known trace constituents. The general analytical characters of pure English peppermint oils vary from season to season; but in the main they are not greatly different from those of any gunuine oil of *Mentha piperita*. The following limits cover many authentic samples tested during the past thirty years:

Specific gravity at 15° C.	**0.902-0.910**
Optical rotation at 20° C.	**−17°—31°**
Refractive index at 20° C.	**1.460-1466.**
Esters, as menthyl acetate	**3.8-9.6 per cent**
Free menthol	**46-61 " "**

In discussing English oil of lavender, Smith notes that free linalol is the principal constituent of the oil. Only about nine-tenths of the total alcohols of English lavender oil consist of tertiary alcohols (linalol) and the other one-tenth represents primary and secondary alcohols. This tenth certainly makes an important contribution to the odor. The total alcohols (free and combined) of English lavender oil amount to about 65 to 70 per cent by weight. This figure is almost certainly higher than the total alcohols of the finest French oil. In comparing the characteristics of the two oils, as given in the following table, it is observed that the low specific gravity and high refractive index follow from the high content of free linalol in the English product:

	French Oil	English Oil
Specific gravity at 15° C.	0.890-0.895	0-882-0.890
Optical rotation at 20° C.	−6°+9°	−6°+11°
Refractive index at 20° C.	1.458-1.460	1.463-1.473
Esters, as linalyl acetate	49-53 per cent	9-14 per cent
Free alcohols, as linalol		50-65 " "

What do YOU look for in an Aromatic Raw Material

- **A clean and fresh fragrance which will impart stability and desirable *long-lasting* qualities to your finished product.**
- **A high degree of purity, assured by careful manufacturing supervision and precise methods of control.**
- **Freedom from the undesirable characteristics of irritation or discoloration.**
- **An economical price consistent with exceptional olfactory value.**

The perfumer will immediately recognize these qualities in VERONA aromatic raw materials—*elusive qualities* which long experience has enabled us to capture and pass on to the perfumer for use in building aromas for finished cosmetics, soaps, toiletries and allied preparations.

VERONA raw materials have proven themselves in countless applications—proven their value at the *point-of-sale* where customer appeal is all-important.

Among the many fine VERONA raw materials, note the following outstanding products:

CYCLAMAL VERONOL RESEDALIA FLORANOL
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Sole representatives in the United States for J. & E. SOZIO, Grasse, France

NATURAL ABSOLUTES ESSENTIAL OILS
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Write us on your Company letterhead for our complete catalog.

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AROMATICS DIVISION
VERONA CHEMICAL COMPANY

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Compounder's Corner

Chlorophyllin Preparations

In a concise review covering various pharmaceutical applications of water-soluble chlorophyllins, J. C. Munch and W. W. Hosler (*Pharm. Internat.* 7:31, March, 1953) present several farmulas to illustrate the application of these chlorophyll derivatives. Among the oral and dental preparations described by these workers is a tooth paste consisting of:

Chlorophyllin (potassium copper derivative)	**0.2 per cent**
Calcium carbonate, precipitated	**20.0 " "**
Soap, neutral white	**5.0 " "**
Tragacanth powder	**6.0 " "**
Polyoxyethylene sorbitan monostearate (Tween 60)	**4.0 " "**
Glycerine	**20.0 " "**
Saccharin sodium	**0.1 " "**
Water, to make	**100.0 " "**

A chlorophyllin-containing tooth powder can be made along the following lines:

Chlorophyllin (potassium copper) derivative	**2.0 per cent**
Calcium phosphate, tribasic	**44.0 " "**
Magnesium carbonate	**11.0 " "**
Calcium carbonate, precipitated	**40.0 " "**
Soap, white neutral	**0.5 " "**
Saccharin sodium	**0.2 " "**
Calcium stearate	**2.0 " "**
Flavor oils	**0.3 " "**

A different type of chlorophyll derivative is specified in the following formula for a denture cleaner:

Chlorophyllin (potassium magnesium derivative)	**1.0 per cent**
Trisodium phosphate	**98.7 " "**
Flavor oils	**0.3 " "**

A chlorophyll ointment is given by Munch and Hosler as consisting of:

Chlorophyllin (potassium copper) derivative	**1.0 per cent**
Stearic acid, triple pressed	**15.0 per cent**
Liquid petrolatum	**5.0 " "**
Carbowax 4000	**10.0 " "**
Triethanolamine	**1.0 " "**
Sodium benzoate	**1.0 " "**
Water, to make	**100.0 " "**

Also included among the formulas is the following combination for making a calamine lotion with chlorophyll:

Chlorophyllin (potassium copper) derivative	**2.0 per cent**
Calamine	**8.0 " "**
Zinc oxide	**8.0 " "**
Polyethylene glycol 400	**8.0 " "**
Polyethylene glycol 400 monostearate	**2.0 " "**
Water, to make	**100.0 " "**

Munch and Hosler also include the following formula for a medicinal type dusting powder:

Chlorophyllin (potassium copper) derivative	**0.2 per cent**
Magnesium carbonate	**25.0 " "**
Zinc stearate	**4.0 " "**
Talc, to make	**100.0 " "**

Not more than 0.5 per cent of perfume oil is incorporated in the powder.

New Water-Soluble Synthetic Gum

According to the report given by G. K. Greminger, R. W. Swinehart and A. T. Maasberg at the 123rd meeting of American Chemical Society, in Los Angeles, a new cellulose derivative has been prepared which possesses the property of solubility in certain hot and cold organic solvents in addition to the properties found in water-soluble methylcellulose. This new derivative, X-2602.1, can be fabricated by the techniques of injection molding, compression molding, extrusion, hot dipping, melt casting, and hot spraying using conventional fabricating equiment for plastics. The shaped articles, which can be in the form of sheeting, rods, tubing, filaments, or complex moldings, are water-soluble. Possible fields of application include foods, soft capsules, burn dressings, water-soluble packaging of toxic materials, paint strippers, and water-soluble cordage or yarn.

Cosmetic Ingredient from Silk

In a process described by C. Ooka in Japanese patent 3050 ('51), 1 kilogram of silk waste is hydrolyzed with 1 liter of hydrochloric acid (specific gravity 1.15) for eight hours at 100° C. The solution is neutralized with sodium hydroxide at less than 30°, and the precipitate is washed with water and dried to obtain in 200 Gm. of a white powder containing amino acids which is mixed with talc, starch, prefume and pigment.

Medicated Creams

According to N. S. Peel (*Soap, Perf. & Cosmetics* 25:1269, 1952) some of the important factors to be considered when compounding a medicated cream are the relative solubility of the medicament, the condition of the skin to be treated, and the lipid solubility water solubility properties of the vehicle. The lipid solubility, based on the lipidal character of the skin fat and sebaceous secretion, has rightly been emphasized in the literature, but it is only in comparatively recent years that the importance of water-solubility has been recognized. Confirmatory evidence of this latter fact continues to accumulate.

Peel presents a number of formulas to illustrate the preparation of medicated creams. Indicative is the following rather simple medicated cream base:

Glyceryl monostearate S	**10 parts**
Glycerine	**26 "**
Bentonite	**2 "**
Water	**63 "**

The bentonite is mixed with 50 parts of the water. The glyceryl monostearate S is melted in the glycerine on a water-bath. The bentonite mixture and the balance of the water are added at the same temperature, and the mixture stirred until cool. This can be used with various medicaments such as tannic acid, iodine, phenol, benzoic acid, calamine and potassium iodide.

Maschmeijer

FINE AROMATICS

Benzyl Acetate
Benzyl Alcohol
Benzyl Benzoate
Methyl Anthranilate
Musk Ambrette, 100%
Musk Keton, 100%
Musk Xylol, 100%

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MODULAN

MODULAN is a chemically treated lanolin containing all the constituents of lanolin deliberately modified by a unique treatment to introduce new and valuable properties.

It represents a radical departure from lanolin in structure, function and odor, and more closely approximates the normal human skin fat.

Investigations now being conducted indicate that **MODULAN** is hypo-allergenic.

SOLUBILITY— Because of induced chemical differences in molecular structure, MODULAN is far more hydrophobic than lanolin and forms clear solutions in mineral oil.

TEXTURE— MODULAN solutions leave water-resistant protective films which are inherently softening and prevent defatting. These films are waxy rather than tacky and are very agreeable to the touch.

COMPATIBILITY— Because of its outstanding compatibility with oil-in-water emulsions and with soaps and shampoos, MODULAN can be used in high concentrations without affecting stability and foaming.

In addition to the above mentioned advantages, MODULAN deposits an emollient, protective film and is therefore highly effective in baby oils, hair dressings, soaps, shampoos, oil-in-water creams and lotions, lipstick, and other cosmetic and pharmaceutical products.

Detailed information available on request.

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INCORPORATED
MILLTOWN • • • NEW JERSEY

Another simple medicated cream consists of:

Glyceryl monostearate S	**18.0 parts**
Spermaceti	**5.0 "**
Diethylene glycol monoethyl ether	**5.0 "**
Water	**70.8 "**
Menthol	**0.2 "**
Camphor	**0.5 part**
Phenol	**0.1 "**
Clove oil	**0.2 "**
Eucalyptus oil	**0.2 "**

In considering more specific types of medicated creams, Peel cites the following acne treatment cream:

Precipitated sulfur	**4.5 Gm.**
Sodium lauryl sulfate	**1.5 "**
Cetyl alcohol	**20.0 "**
Glycerine	**7.0 "**
Petrolatum, white	**24.0 "**
Perfume oil, non-irritant	**sufficient**
Water, to make	**100.0 cc.**

A phenyl salicylate cream can be made along the following lines:

Phenyl salicylate	**100.0 Gm.**
Cetyl stearyl alcohols, 10 per cent sulphated	**50.0 "**
Glyceryl monostereate	**50.0 "**
Petroleum jelly	**250.0 "**
Glycerine	**100.0 "**
Oil of lemon	**2.0 "**
Oil of lavender	**0.5 "**
Oil of rose	**0.1 "**
Distilled water	**447.4 cc.**

This is a Danish official formula. Replacing the phenyl salicylate with 80 Gm. of menthyl salicylate is stated to give a reasonably effective anti-sunburn cream.

Peel gives the following as a formula for a dandruff treatment cream:

Coal tar distillate	**2 Gm.**
Salicylic acid	**3 "**
Precipitated sulfur	**2 "**
Lanette Wax S	**10 "**
Cetyl alcohol	**5 "**
Oleyl alcohol	**2 "**
Vegetable oil	**5 "**
Water	**71 cc.**

Sodium Chlorite in Cold Waving

In British patent 671,844 (through *Soap, Perf. & Cosmetics* 15:1067, 1952), R. G. C. Jenkins points out that in the permanent waving of hair, particularly in the cold-waving process, the hair is treated with a reducing agent, such as mercaptan solutions, which reduces part of the keratin of the hair. Subsequently, the hair must be restored to a normal state and the excess mercaptan solution, plus the by-products of its reaction with the hair, must be removed from the hair or rendered inactive. It has been the practice to follow such mercaptan treatment of the hair with a treatment whereby the hair is subjected to contact with a solution containing an oxidizing agent. This treatment with the oxidizing agent sets or fixes the hair so that it does not tend to relax or lose its configuration or wave. The materials commonly used in the oxidizing solutions are ammonium persulphate, hypochlorites, and hydrogen peroxide. In the new method, Jenkins claims that if sodium chlorite is used as an oxidizing agent, the reaction with mercaptan is more rapid and is sufficiently complete with concentrations practical for use to fix the wave more permanently than any of the other oxidizing agents. The chlorite treatment has the additional advantage of not bleaching the hair or otherwise impairing it.

Egg Oil

The use of egg as an emulsifying agent is so old that its first use is lost in antiquity. However, as pointed out by F. J. Bandelin and J. V. Tuschhoff (*J. A. Ph. A.*, Pract. Ed. 14:106, 1953) the advent of newer emulsifying agents and the obvious difficulties arising from the uncertain keeping properties of egg emulsions caused them to fall into disuse, and they were eventually dropped from the N. F. Recently, through a new process, involving both solvent extraction and dehydration, an egg oil has been isolated which embodies, in concentrated form, all of the emulsifying properties of egg yolk without the hazards of spoilage.

Since egg oil exhibits marked emulsifying properties with a propensity for forming water-in-oil emulsions, investigations were carried out to determine its incorporation into suitable ointment bases for utilization as an ointment vehicle with water absorbing properties. Of the bases prepared, the following anhydrous egg oil base was found to be highly acceptable:

Egg Oil	**10 Gm.**
White Wax	**5 Gm.**
White Petrolatum	**85 Gm.**

This base is smooth and firm but not sticky or tacky and exerts no pull or friction on application. When applied to the skin, it has excellent spreading properties and marked emollient and lubricating characteristics. It was found that the egg oil confers hydrophilic properties upon the base which may be utilized as an absorption base for the preparation of water-in-oil emulsions. The compatibility of these bases with commonly used dermatological agents is "more than satisfactory."

Aside from its application in pharmaceutical ointment bases, egg oil apparently has possible applications in cosmetic formulations. Not only is egg oil an excellent emulsifying agent in the formulation of cold creams, but it contributes to the texture, as well as to the lubricating and spreading properties of these creams which may also be considered all-purpose creams, hand creams, and/or foundation creams. The table given below provides a number of formulas for such creams utilizing egg oil. Although these formulas should not be considered as the ultimate for such creams, they may serve as a guide in developing such preparations.

Ingredients	1	2	3	4	5	6
Egg Oil	5	5	6	4	10	5
Ceresin Wax	4	8			3	7
White Petrolatum	45	6	4		3	4
Mineral Oil—Heavy		18	24		24	14
Diethylene Glycol Stearate		5			2	
Stearic Acid			14			
Trithanolamine			1			
Spermaceti	3		3	5		
Glyceryl Monostearate	3			20		
Cetyl Alcohol					2	
Diglycol Stearate						13
Glycerine			5	5		
Water to make	100	100	100	100	100	100

Various other cosmetic products utilizing egg oil as an emulsifying and emollient agent have been prepared, such as the following egg oil hand lotion:

Glyceryl Monostearate	**18.0 parts**
Stearic Acid	**13.0 "**
Propylene Glycol	**25.0 "**
Alcohol	**50.0 "**
Triethanolamine	**2.5 "**
Egg Oil	**10.0 "**
Perfume	**5.0 "**
Water	**376.7 "**

Also indicative is an egg oil shampoo consisting of:

Egg Oil	**25 parts**
Mineral Oil	**150 "**
Diglycol Laurate	**40 "**
Cocoanut Oil Soap 40 per cent	**235 "**
Aerosol OT 10 per cent Solution	**50 "**

Another typical preparation is given in the following formula for an egg oil brushless shaving cream:

Egg Oil	**3.0 parts**
Stearic Acid	**16.0 "**
Mineral Oil	**9.0 "**
Glycerine	**5.0 "**
Triethanolamine	**1.8 "**
Borax	**1.8 "**
Water, to make	**100.0 "**

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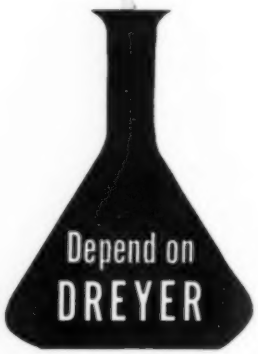

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Patent Thoughts and Trends

*by Thomas Cifelli, Jr.**
PATENT ATTORNEY

THE NEW U. S. PATENT LAW

It will be recalled that some of the highlights of the new U. S. patent law were given in the August 1952, issue of This Journal. The law became effective on January 1, of this year. It is believed that now that the law is in actual operation the reader will be interested in seeing it, or rather at least the most important parts of it in black and white.

A few comments appear to be in order. In the first place the writer doubts whether anyone would be so bold as to try to read all of the excerpts of the law which follow, at one sitting. However, it is hoped that what follows will be of sufficient interest to the reader that it will be kept at hand for reference purposes.

Another word of caution stems from the fact that even though many patent questions can be answered by merely referring to the patent law, one can never be sure about this, especially when a new law is involved. In this connection, it is already evident from the few cases which have already been reported, and in which the new law has been referred to, that the Courts are not apt to interpret the new law the way many people might have thought would be the case. Consequently, it appears advisable to remind the reader again that while the new law seems to have a number of improvements in it, one can not be sure just what these new provisions means until the Federal Courts have had occasion to pass on them.

Nevertheless, the new law is outstanding in many ways. To my way of thinking, the outstanding feature is the fact that Congress, after considering a large number of proposed changes, virtually gave its stamp of approval on the patent laws as they stood for some time, by re-enacting substantially the same legislation. This feature is all the more remarkable when one recalls all of the attacks that have been made on the U. S. patent system. These attacks were so frequent and sounded so convincing that even judges in high places were impressed and made statements and actual decisions questioning whether the patent system had outlived its usefulness.

With the foregoing in mind, a number of actual excerpts from the law are given in full. Provisions which do not appear to be of general interest, for example, the make-up of the Patent Office and its duties, are omitted.

Sec. 101. Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, of any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Sec. 102. Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or,

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Sec. 103. Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Sec. 111. Application for patent

Application for patent shall be made by the inventor, except as otherwise provided in this title, in writing to the Commissioner. Such application shall include: (1) a specification as prescribed by section 112 of this title; (2) a drawing as prescribed by section 113 of this title; and (3) an oath by the applicant as prescribed by section 115 of this title. The application must be signed by the applicant as prescribed by section 115 of this title. The application must be signed by the applicant and accompanied by the fee required by law.

Sec. 112. Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or

*Gaylor, Cifelli & Jurick
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with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Sec. 122. Confidential status

Applications for patents shall be kept in confidence by the Patent Office and no information concerning the same given without authority of the applicant or owner unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner.

Sec. 135. Interferences

Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any unexpired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be. The question of priority of invention shall be determined by a board of patent interferences (consisting of three examiners of interferences) whose decision, if adverse to the claim of an applicant, shall constitute the final refusal by the Patent Office of the claims involved, and the Commissioner may issue a patent to the applicant who is adjudged the prior inventor. A final judgment adverse to a patentee from which no appeal or other review has been or can be taken or had shall constitute cancellation of the claims involved from the patent, and notice thereof shall be endorsed on copies of the patent thereafter distributed by the Patent Office.

A claim which is the same as, or for the same or substantially the same subject matter as, a claim of an issued patent may not be made in any application unless such a claim is made prior to one year from the date on which the patent was granted.

Sec. 151. Time of issue of patent

The patent shall issue within three months from the date of the payment of the final fee, which shall be paid not later than six months after written notice to the applicant of allowance of the application, but the Commissioner may accept the final fee if paid within one year after the six month period for payment, and the patent shall issue.

Sec. 154. Contents and term of patent

Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, for the term of seventeen years, of the right to exclude others from making, using, or selling the invention throughout the United States, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof.

Sec. 262. Joint owners

In the absence of any agreement to the contrary, each of the joint owners of a patent may make, use or sell the patented invention without the consent of and without accounting to the other owners.

Sec. 271. Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

Sec. 282. Presumption of validity defenses

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement.

A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it.

The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Noninfringement, absence of liability for infringement, or unenforceability,

(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

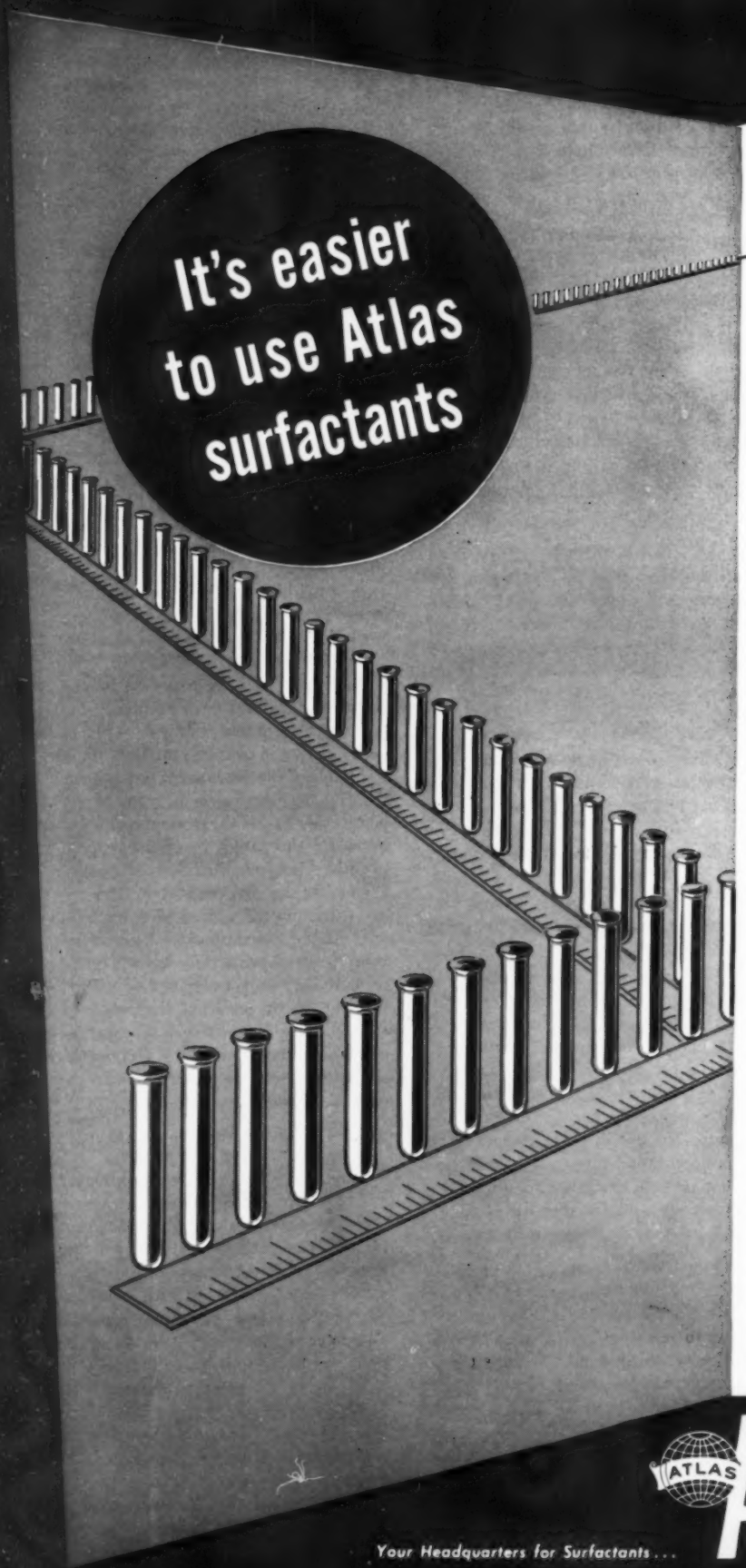
(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of section 112 or 251 of this title,

(4) Any other fact or act made a defense by this title. In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Court of Claims, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires.

Sec. 287. Limitation on damages; marking and notice

Patentees, and persons making or selling any patented article for or under them, may give notice to the public that the same is patented, either by fixing thereon the word "patent" or the abbreviation "pat.", together with the number of the patent, or when, from the character of the article, this can not be done, by fixing to it, or to the package wherein one or more of them is contained, a label containing a like notice. In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and con-

(Continued on page 716)



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Industry's Books

Case Studies in Commercial Chemical Development, by John E. Ullmann, 134 pp., Chemonomics, Inc., New York (1953), Paper $5.

Commercial Chemical Development is the cooperation of scientific, production, marketing and application research with the object of establishing a profitable product. This collection of case studies is presented as a description of the methods by which a large variety of products from the chemical process industries have been developed, tested and finally placed on the market. The case histories include such chemicals and chemical products as: Aerosols, Toxaphene, Krilium, Orlon, Vicara, TB drug, Glyoxal and others. This is the first book to present case histories of the commercial development of chemicals.

A Survey of the Literature of dental Caries, Prepared for the Food and Nutrition Board National Research Council under the supervision of the Committee on Dental Health, P. C. Jeans, Chairman, C. A. Elvehjem and C. C. King, by Guttorm Toverud, University of Iowa, Gerald J. Cox, University of Pittsburgh, Sidney B. Finn, University of Alabama, Charles F. Bodecker, Columbia University, and James H. Shaw, Harvard University, Publication 225, National Academy of Sciences, Washington, 567 pp., Illus., (1952), cloth $3.00.

The review of the literature on dental caries sponsored by the National Research Council is a distinct contribution to dentistry. It consists of abstracts of reports in this field with critical summaries by the committee appointed by the National Research Council. The summaries of each section emphasize details of special significance. Bringing together in historical perspective accounts of work that has been done provides, in tangible form, the sources and nature of investigations upon which present knowledge of dental caries rests. It reveals the situation as it is today. As a whole the review reveals limitations resulting from the absence of standardized examination technic in determining caries incidence; the acceptance of deficient statistical data; restricted research interests; the lack of adequate controls in observations and experimental research; and the tendency to overlook the evolutionary status of the dentition in the human organism.

Industrial Safety, Edited by Roland B. Blake, Second Ed., 474 pp., Illus., Prentice-Hall Inc., (1953), $7.90.

This work has been designed to fill the up-to-date requirements in this field. It is the only book written from the point of view of the industrial worker on the job. Every man who is now employed in production and who will continue in industry will benefit by this book. The authors are seven leading authorities in Safety Engineering Management and Engineering. They have provided industrial workers with a handbook that applies to all industries. It is a very good self-study course for trainees in industrial management, foremanship training and basic engineering. Among other subjects it discusses the history of industrial safety, causes of accidents in industry, accident prevention, inspection, safeguarding machinery, safety training and education, specific accident hazards, reports and records.

Formulary of Perfumery and of Cosmetology, a Translation by A.R.I.C., of the original French edition of Formulaire de Parfumerie et de Cosmetologie by R. M. Gattefosse, 252 pp., Leonard Hill Limited, London, (1952), cloth 17s. 6d.

This translation of the French work by Gattefosse is a welcome addition to the literature on perfumery, particularly since English editions of the foreign books on this subject are so limited. The translation is divided into the following main parts: Part I: Synthetic Perfumes and 100 per cent Compositions. Part II: Alcoholic Perfumes—1. Toilet Waters; 2. De-Luxe Extracts and Perfumes for Handkerchiefs; 3. Various Types of Perfumes. There is also a formulary of Cosmetology divided as follows: 1. Beauty Creams. 2. Cosmetic Specialties for Holidays. 3. Rouges. 4. Lotions. 5. Dentifrices. 6. Hair Products. 7. Nail Preparations. It may be said that this work is replete with very many formulas for all these products, together with manufacturing data for each item.

Clinical Allergy, by French K. Hansel, M.D., M.S., Director, Hansel Foundation for Education and Research in Allergy, 1005 pp., Illus., The C. V. Mosby Co., St. Louis, Cloth. $17.50.

This work is intended to appeal to anyone interested in the subject. It incorporates all the important special phases of allergy as related to otolaryngology, ophthalmology, pediatrics, and dermatology. Attention has been particularly directed to the nose, the paranasal sinuses, the ears, the eyes, and the tracheobronchial tree, as these structures are most commonly involved. The whole problem of the allergic patient with hay fever, bronchial asthma, urticaria, eczema, contact dermatitis, headache, and other manifestations is presented with a new method of approach by which local and constitutional reactions may be avoided when the injection of various allergenic agents is necessary. Simplified methods of treatment of hay fever and the reactions to antibiotics which are commonly encountered today should be of particular interest to the general practitioner and the pediatrician. Five chapters are devoted to the specific problems in allergy as related to infants and children. They concern the respiratory and gastrointestinal tracts, and the various dermatologic conditions of allergic origin. In the management of the problem of desensitization or immunization of the patient to pollens, house dust, miscellaneous inhalants, pathogenic molds, vaccines, and other agents, a new method of treatment based upon the principle of the "small or optimum dosage" has been presented for the first time and represents a marked advance in therapy. In recent years, outstanding progress has been made in the management of the headache problem. Allergic headache, migraine, and histaminic cephalalgia are now recognized as definite and distinct types. Finally, cardiovascular allergy must be considered as a very important phase of medicine, especially as it is related to the use of tobacco.

Animal Health

Chloromycetin in Distemper

According to a note in the March, 1953, issue of the *Journal of the American Veterinary Medical Association* an Irish veterinarian reports on 15 cases of what he calls "paradistemper" in dogs which were treated with chloromycetin with good results. These dogs had not responded to previous treatment with penicillin, sulfonamides, and other medication. Results were satisfactory in all but 3 cases. The usual symptoms were dullness, lack of appetite, some vomiting and diarrhea, temperatures to 105° F., and some developed hard pads. A persistent inflammation of the sclera served as a reliable guide to the progress of the patient. The dosage of chloromycetin for a 20-pound dog was 2 capsules of 250 mg. orally, followed by 1 capsule every eight hours until 12 has been given.

Aureomycin for Clostridium Infection in Sheep

The effectiveness of aureomycin in the treatment of experimental *Clostridium chauvoei* infection in sheep has been studied by R. C. Percival, J. D. Leaming, F. V. Martini and G. Tonelli (*Cornell Vet.* 43:92, 1953). In their investigations, aureomycin administration was started immediately following, and at 12 and 24 hours after, induced infection, at a dosage of 5 mg. per pound of body weight, intravenously, once daily for 4 days. Aureomycin administered immediately following and 12 hours after infection protected 100 per cent of the sheep treated; administration 24 hours postinfection resulted in 80 per cent survival; and nontreated, infected controls showed a survival rate of 20 per cent. The occurrence of severe lameness was prevented in 80 per cent of those treated immediately after infection, and in 10 per cent treated 12 hours postinfection, while all controls animals developed severe lameness.

Surital Sodium as an Anesthetic for Dogs and Cats

In reporting their clinical experience with Surital Sodium in over 400 dogs and cats, H. W. Knirk and F. E. Eads (*No. Am. Vet.* 34:195, 1953) state that this ultra-short-acting barbiturate was found to be a safe and satisfactory anesthetic when used intravenously. It has high potency with low toxicity, acts rapidly, is quickly detoxicated, and has a minimum of deleterious side reactions. Surital may be administered either to young animals or very old animals with the same margin of safety, and is particularly adaptable for operations of short duration. Surital Sodium has been found to be the anesthetic of choice for a variety of procedures including: ovariectomy, trauma repair, treatment of otitis, extraction of teeth, castration, fracture reduction, ear-trimming, ocular surgery, lancing of abscesses, radiography, relaxation of abdomen for more thorough palpation, removal of neoplasma, tonsillectomy, pyometra, and cesarean section. Seldom is it necessary to use any pre-anesthetic medication.

New Anticonvulsant for Dogs

A new anticonvulsant drug, 5-phenyl-5 - ethyl - hexahydropyrimide - 4:6 - dione which has the trade name "Mysoline," recently has been introduced in the human field for the treatment of epilepsy. Discovered in England in 1952, it was found to be very effective in protecting laboratory animals against both electrically and chemically induced convulsions. Moreover, it was demonstrated that the drug's toxicity was low and that with it control of seizures could be obtained virtually without any hypnotic side effects.

Because of the favorable reports and because none of the compounds currently available is really satisfactory in the treatment of epilepsy and epileptiform convulsions in dogs, N. H. Lambert (*Vet. Rec.* 65:123, 1953) decided to study the use of the new product in these animals. On the basis of his experience, the new anticonvulsant appears to have a high margin of safety and in the cases treated there has been, so far, no evidence of untoward side effects. Mysoline has been tried on several cases of chorea, in some of them in quite large doses, but apparently without beneficial effect. Excellent results, however, have been obtained in a number of cases of hysteria and convulsions subsequent to or accompanying virus infections. In para-distemper (canine encephalitis, hard-pad disease) evidence is accumulating which may show that Mysoline can give good control of the nervous states which are the most serious complications of this infection. A number of such cases have been treated with Mysoline from the time of diagnosis, often when the temperature was very high and the animal obviously acutely ill. In these the absence of nervous sequelae has been a notable feature.

Enheptin for Blackhead in Turkeys

In the 65th Annual Report of the University of Maryland Agricultural Experiment Station, it is pointed out that blackhead long has been a serious menace to the turkey industry of the state and nation. The ailment is caused by a small parasite scientifically designated *Histomonas meleagridis*. The recently discovered drug known as enheptin (2-amino, 5-nitrothiazole), continues to prove satisfactory in controlling the disease. Observations indicate that powdered enheptin fed in the mash is somewhat more effective than liquid enheptin administered in water. The so-called low level, (0.05 per cent) has been somewhat more effective than the high level (0.1 per cent) concentration of the drug sometimes recommended for treatment. Investigational work conducted during the present year has indicated that, while turkeys are protected by enheptin, they do not form immunity during the treatment period. The effect of treatment, therefore, lasts only as long as the drug is given.

PABA for Air Sac Disease of Poultry

According to a note in *Chemistry* (26: 31, Feb. 1953), air sac disease is a chronic ailment which has become more prevalent and more important economically within the past two years, although poultrymen have known it for much longer. The reason for this increase is not known. With the hope of helping to prevent air sac disease of poultry, which may kill up to 50 per cent of affected chickens and turkeys, the Food and Drug Administration issued a new

regulation permitting addition of para-aminobenzoic acid (PABA) to poultry feed. The Administration, it is said, is satisfied that PABA will not cause any harm to people eating the poultry that have received the vitamin. PABA may be added directly to feeds or with the antibiotic formula used to promote growth.

Aureomycin for Listeriosis

The results of the clinical use of aureomycin against listeriosis in sheep and cattle under field conditions and the sequel to survival are presented in the report of M. L. Gray and G. R. Moore (*No. Amer. Vet.* 34:99, 1953). They observed that aureomycin appeared to give therapeutic assistance to cattle with listeriosis but was of no value for treating sheep. Antemortem diagnosis on the basis of clinical symptoms alone was unreliable. Aureomycin penetrated the blood-brain barrier of sheep within four hours, but in the concentrations used did not interfere with the isolation of *Listeria*. Listeriosis produced long-lasting brain damage, which was reflected in the actions of surviving animals and confirmed by examination of tissue sections taken one year after recovery. It was suggested that surviving animals were safe for human consumption three weeks after abatement of symptoms.

Improved Feathering and Feed Efficiency of Broilers

In the 65th Annual Report of the Maryland Agricultural Experiment Station, it is stated that in trials at the Salisbury Poultry Experimental Farm, the addition of nicotinic acid and calcium pantothenate to a practical-type broiler ration improved the feathering condition, growth rate, and feed efficiency of broilers housed in pens with radiant-heated floors. Under these conditions, the addition of 20 Gm. of niacin per ton of feed resulted in better feathering, heavier birds, and slightly better feed conversion than was obtained when 0.10 Gm. of niacin was added per ton. Including five per cent wheat standard middlings, five per cent pulverized oats, or a combination of both also slightly improved the feather scores at 10 weeks. Nevertheless, the addition of these materials does not appear to be an economic way to counteracting poor feathering, since they reduced feed efficiency. The most striking observation in this trial was the marked improvement in the feathering condition between the broilers housed in the floor pens heated with overhead hot water heat and containing litter as compared with those broilers reared in pens heated with radiant heat and containing no litter. All groups housed in the pens with litter and overhead heat showed excellent feathering and derived no additional benefit from the supplements.

Continuous Antibiotic Feeding for Turkeys

In the March, 1953, issue of *Science for the Farmer*, issued by Pennsylvania Agricultural Experiment Station, J. C. Atkinson, R. C. Boucher and E. W. Callenbach report that turkeys of heavier weight at market time can be produced if fed an antibiotic-supplemented feed, but only if the supplementation is continuous, "all the way," from hatching to marketing. Experiments demonstrating this fact were conducted by using the antibiotic, aureomycin, with 300 Penn State White Holland turkeys. The day-old turkey poults were divided into three groups of 100 each and placed on three different diets. The turkeys fed the antibiotic from day-old to market-age were heaviest. Those fed the antiobitic only in the starter diet were the lightest, and those not fed the antibiotic at all were intermediate in weight at the end of the experiment. Statistical analysis showed that the males, but not the females, fed 4.5 G., per ton of aureomycin all the way were significantly heavier than either of the other two groups. The males that received antibiotic supplemented starter only were significantly lighter than the males of the control group while the females did not significantly differ. The turkeys fed the antibiotic all the way were found to be significantly more uniform than those fed the antibiotic only in the starter diet. No other significant group differences were observed in uniformity. Other facts observed were that the turkeys became increasingly more uniform as they grew older, and that the females were consistently more uniform than the males.

Various levels of antibiotic supplementation were tried in other experiments involving about 900 White Holland poults during the first eight weeks of age. Another antibiotic, terramycin, was used in these experiments at levels of 2.25, 4.5, 9, and 18 Gm. per ton. The addition of 9 Gm. per ton of antibiotic gave the greatest growth response, 14.9 per cent over the controls, at the eighth week of age. The addition of 4.5 Gm. gave an increase of 7.9 per cent, and the addition of 2.25 Gm. gave an increase of 8.9 per cent. The highest level of antibiotic supplementation, 18 Gm. per ton, gave the smallest increase, only 8.1 per cent. Apparently there is no advantage and there may be a disadvantage in feeding an excess of antibiotic.

Teat Remedies

In a discussion of mastitis and teat remedies, R. Seiden (*Manuf. Chem.* 24: 63, 1953) observes that cowpox and various teat injuries are often predisposing causes of mastitis. Sores on the udder or teats render milking painful to the animal. Often surgery is necessary to save a valuable cow or to restore her usefulness as a good milk producer. In considering specific treatments, Seiden advises that saponated cresol solution of 3 per cent strength, used twice daily to bathe the diseased parts, is indicated in cowpox. This should be followed by the application of any mild antiseptic ointment. Triple sulfonamides, prepared by dissolving 4 per cent each of the sodium salts of sulfamerazine, sulfadiazine and sulfathiazole or sulfamethazine in distilled water, are recommended in 25-cc. doses per teat to prevent their infection after injury or surgery.

A wound powder for cuts and lacerations on teats is given by Seiden as follows:

Tyrothricin	**5 Gm.**
Methylrosaniline chloride	**90 Gm.**
Phenacaine hydrochloride	**100 Gm.**
Sulfathiazole	**2,000 Gm.**
Sulfanilamide	**7,805 Gm.**

The first three ingredients are thoroughly mixed before they are incorporated into the sulfa base.

A sphincter ointment, to be used after the application of a 10 per cent silver nitrate solution to the infected teat, consists of:

Acriflavine	**2.50 parts**
Urea	**9.26 "**
Sulfathiazole	**11.26 "**
White petrolatum	**34.00 "**

The powder mixture is best incorporated, by stirring, into the warmed ointment base until it is cooled to room temperature. Then it is milled and put in tubes or jars.

Glycerine - iodine solution, says Seiden, is an old standby for chapped or cracked teats. This remedy, which acts as a mild antiseptic and emollient, is a mixture of one part of iodine tincture and four to six parts of glycerine.

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Abreast Of The Markets

Markets Relatively Quiet in April; Menthol Maintains Steady Pace, Anethole More Active

All the markets were relatively quiet in April, although there were individual cases of activity, as represented by the various graphs. The medicinal chemicals index, for example, on page 687, did not change from the previous month, while the price index of fifty commodities on page 685 advanced slightly from 134.5 to 135.1.

In the essential-oil field, there were a few price changes of importance among them, bois de rose, cassia and lime oils which advanced, and geranium, which declined. These oils caused the index to go up from 153.9 to 157.9. In the case of cassia oil, and also anise, a very definite shortage has developed because of the embargo on Chinese exports. These oils have been arriving in the United States by devious routes, but reports now indicate that the authorities are attempting to close up all the channels. Should this move be successful, the prices of both these oils will continue to advance, or, the oils themselves may be taken off the market and sold very sparingly by the dealers to their regular customers.

Prices in the botanical market continued to decline, as represented by the graph (page 687), in which the index dropped from 215.3 to 209.9. This is deceiving at first glance, as there is an undercurrent of firmness running through the botanical market. Spokesmen believe that replacement costs on many of the items will be higher in the next few months.

Menthol Remains Steady

There have been no drastic changes in the price setup of menthol, as might have been expected in view of the Korean peace talks. Brazilian material is still selling for about $6 or $6.10, while the higher-priced Japanese material is being quoted at about $7.50, as is the Chinese menthol. The big question as far as this product is concerned seems to be how long the Eastern menthol will maintain such a higher price than the Brazilian commodity. While it is known that some consumers will pay premium prices to obtain the Japanese menthol, the present discrepancy of $1.50 is so great as to discourage most would-be buyers.

Vanilla Beans Unchanged

There was no change in the price of vanilla beans during April, although it appears that the market will become firmer as time goes by. Reports from the origin indicate that, because of the reduced prices which have been in effect during this year and last, planters have tended to neglect their vines and reduce their drops. As a result, there will be smaller yields in the immediate months ahead. This will bring about a shortage, and the price will advance.

Papain Still Firm

Continuing the firm trend of recent weeks, papain prices remained in the range between $6.25 and $7.50 a pound. Demand for the item was still on the heavy side. Sizable imports have been entering this country, but they have differed considerably in quality.

Anethole at $1

Anethole has become increasingly more widely used in recent months as a result of the shortage of anise oil. This material is being produced now at a rate which is more than capable of handling all the demand. There have been several price changes in the past few months, with the current figure at $1 a pound.

Price Competition in Caffeine

Owing to the arrival in this country of lower-priced caffeine, domestic material last month dropped 50 cents from $3.30 to $2.80 a pound. While the domestic caffeine is of better quality and superior in respect to clarity and odor, there are some manufacturers who do not have to be so particular about these factors and do not need absolutely colorless material. In addition, there are some manufacturers who shy away from the higher-cost caffeine in order to save money.

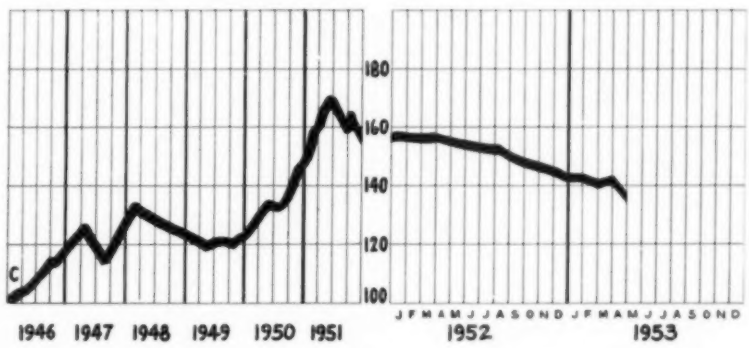
Members of the trade expect increasing competition from such imported drugs in the months to come.

Alcohol Demand High

The demand for alcohol has been going along at a steady rate, with most of the consumption being taken up by the normal channels. This is in addition to that alcohol which was sold to the

(*Continued on page 687*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index declined from 141.5 to 135.91. Balsam tolu was lower.

Prices quoted in this section were current on the first of this month.

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Balsam Capaiba Expected to Advance in Price; Colocynth Pulp Replacenent Cost Up; Other Botanicals Lower

While balsam copaiba has not gone up in price yet, dealers expect the spot quotation to be higher in a very short time. Shipping prices at the origin are already as much as 15 cents a pound more in some quarters. As soon as the spot market begins to reflect this advance, it will be passed on to the consumers.

The ample supplies that are on hand now in the spot market, and that have been available for a long time, have tended to produce a false picture, since these stocks are left over from last year and do not represent the tight condition in effect overseas at the present time.

With the active season fast approaching, it is expected that the spot material in balsam copaiba will be disposed of quite rapidly. As soon as this does occur, higher prices can be expected.

Colocynth Pulp Puzzling

Although the spot quotation of colocynth pulp extends between 35 cents and 40 cents, spokesmen in the trade indicate that replacement costs would amount to about 45 cents a pound, or as high as 50 cents. There is hardly any demand for the product at the present time, and perhaps this is the reason for the discrepancy. If demand should increase, however, it is very probably that, as soon as the spot stocks were used up, and the importers forced to go to the origin for new supplies, they would have to advance their prices considerably.

Some Ipecac Reduced

The better grades of ipecac root remained at previous levels, extending up as high as $6.50, but the cheaper grades were reduced last month to $5 a pound. The explanation of this, according to one source, is that the cheaper material is derived from those areas which produce only average quality material. In other words, most of this cheaper material assays at about 1.75 per cent alkaloid and cannot be listed as N.F. because they are below the required two per cent alkaloid minimum required.

The higher-alkaloid content ipecac root is quite difficult to obtain at the present time, hence the high price. Dealers caution against buying the cheaper material lest it be under the N.F. standards.

Cascara Bark Lower

Cascara Sagrada was reduced to 36 cents a pound last month, possibly because there is very little demand for the item at the present time. It is fortunate that this is the case, for there is hardly any material in stock, and most of the carry-over from 1952 has been used up.

Ergot Reduced

In spite of the fact that producers at the origin are keeping their prices on ergot at a high level, the spot price of ergot was reduced last month to $2.75 a pound. That is to say, the price declined in some quarters, while in others, it was maintained at the previous level of $3.25.

Added to this condition is the fact that there is very little material left on the spot market at the present time. As soon as these small stocks are used up, therefore, the price will most likely advance to cover the cost of replacements. How firm the prices will become, and how soon this will take place depends entirely on the current demand and the length of time the present stocks are plentiful enough to satisfy that demand.

Cocoa Butter Sluggish

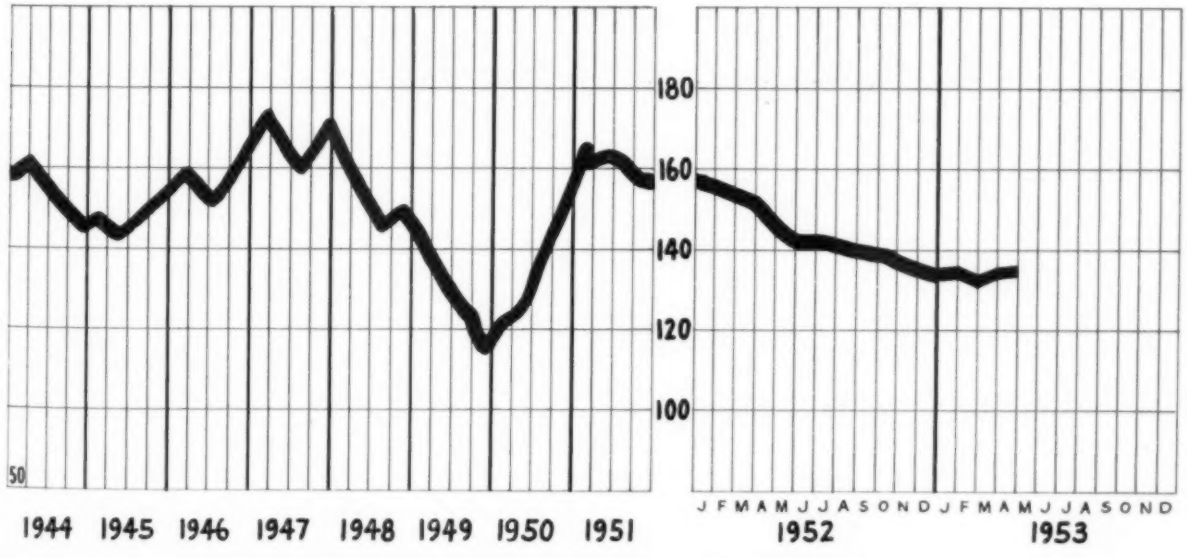
Now that the Spring season is here, the busy period for the confectionery industry has passed, and the demand for cocoa butter has dropped off. The price stands at 70 cents a pound and is expected to decline further as the warmer months appear.

Benzoin Gum Lower

Prices of benzoin gum, Sumatra, have been reduced at the origin, and this has brought about a reduction on the spot level. The range now extends from 37 cents to 39 cents.

The same condition has occurred in

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for April went up slightly from 134.5 to 135.1.

APRIL PRICE CHANGES

UP

Bois de Rose, Brazilian 45c
Cascara Sagrada 1c
Cassia Oil, Redist. $3
Golden Seal Root 15c
Lime Oil, Expressed 10c
Petitgrain Oil 10c

DOWN

Balsam Tolu 35c
Benzoin Gum, Sumatra 3c
Caffeine Alkaloid 50c
Ergot 50c
Geranium Oil, African $2.75
Bourbon $3.75
Ipecac Root $1.25

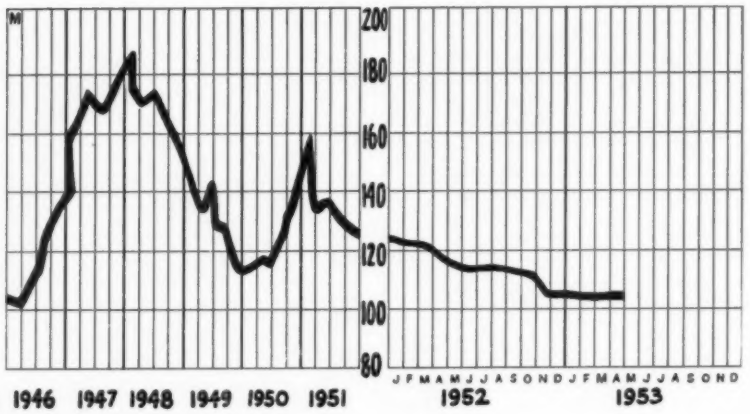
buchu leaves at the origin; however, there has been no change in the spot price as yet. The belief is that such a decline will take place in a short time.

Anise Seed Star Scarce

Chinese anise seed, like the oil, is very scarce at the present time, and most dealers are being very careful to control their sales so as not to deplete their stocks. The material is being quoted at 75 cents, but this figure is largely nominal, with only small amounts available.

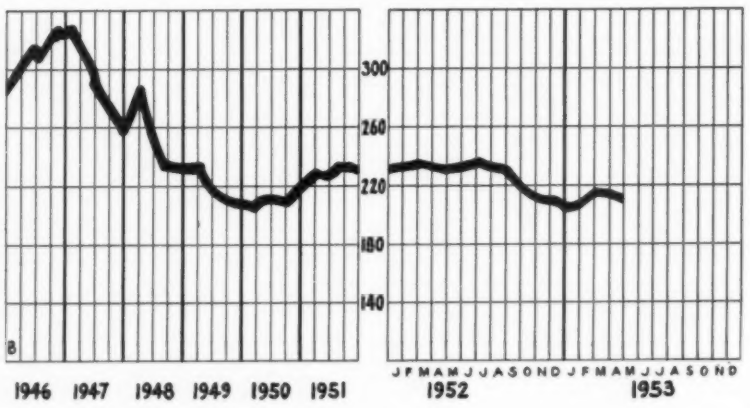
To ease the situation a little bit, there seemed to be plenty of Mexican and spanish anise seed on hand last month, with the prices a little lower than the Chinese.

15 Botanicals—Weighted Price Index. 1926=100.



The medicinal chemicals index remained at 104.5. There were no changes.

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The botanicals index dropped from 215.3 to 209.9.
Balsam tolu, cascara sagrada, ergot and ipecac root were lower.

Alcohol Demand High

(*Continued from page 683*)

Reconstruction Finance Corporation in early April.

At the present time, it is entirely possible that stocks in the United States may build up to a surplus, especially if foreign countries continue to have excess material on hand. The next few months will probably tell the story more clearly.

Peppermint Leaves Scarce

Imported peppermint leaves are virtually impossible to obtain, and when they can be had, they sell as high as $1.25 to $1.40 a pound. Hardly any domestic material is available at all.

Agar Becoming Firmer

Agar remained steady at $2.10 last month, but all signs point to a firmer market in the future. In Japan, more than half of the year's production has been bought by European interests. Although there is very little spot material left at this price, still the replacement figures have not been advanced as yet. Importers believe, however, that the spot prices will begin to inch upwards before very long.

Nutmeg Oil Lower

Some dealers are quoting nutmeg oil at $2.60 a pound, with the range extending up to $3.65 in some cases, for the West Indian oil. The East Indian material was somewhat higher, in the vicinity of $3. This has automatically made the West Indian oil more in demand during the past months. In any case, there is more than enough oil on hand to handle whatever demands come up.

Peppermint Oil Unchanged

Peppermint oil was uneventful last month, with the prices of both the natural and redistilled oils remaining at the previous month's levels of $5.75 and $6.25, respectively. There was no change, either, in the quotations emanating from the Midwest and Western states.

Spearmint Oil Is Touchy

Because stocks of spearmint oil are very much on the slim side in the spot market, as well as at the producing centers, spokesmen indicate that the least change in consumer demand could easily affect the market price. The

new-crop material is not expected to arrive on the market for several months yet, and it is questionable as to whether or not the existing stocks will be able to satisfy the consumer needs until that time arrives.

Geranium Oil Lower

Both the African and Bourbon geranium oils declined last month, the former to $11, and the latter, to $10 a pound. As yet, there have been no extra demands on the oil, and it appeared that the item would continue at a steady pace.

Citronella Oil Stronger

Although the spot prices of citronella oil did not go up during April, authorities state that a definite firmness has set in at the origin. Dealers are quoting the Ceylon oil in the range between 60 cents and 80 cents, and the Java oil, between 65 cents and $1.

Importers were finding it difficult to obtain replacement material from the source; however, it was said that a considerable amount of oil was expected to arrive from Formosa.

Lemon Oil on Firm Side

Lemon oil, which is now becoming very much in demand because of the warmer weather, has developed an increased firmness in recent weeks. In many cases, the dealers were checking their sales very closely, allocating their stocks, and taking care of their regular customers first. The domestic oil last month was being quoted at $6 as a minimum, and ranged up to $6.50.

In the case of the Italian oil, the price range extended from $5.65 to $9.50, and this oil, too, is limited in supply. The outlook for lemon oil is not entirely unfavorable, although most spokesmen state they expect a period of meagre stocks, especially during the Spring and Summer months. There were some reports that a sizable quantity of oil was being shipped from Italy.

Orange Oil Higher

Producers of orange oil moved their prices up all along the line last month, with the American cold pressed 25 cents higher at $1.25 minimum, and the American Distilled, 10 cents higher at 80 cents.

A turnabout is occurring in this market, as a result of the recent low prices which were in effect. There is not as much Florida oil on hand now as there previously was—either because of reduced production, or because at the lower prices more oil was bought. This reversal is a fortunate occurrence for the producers, since it has taken effect before the price of the oil reached the drastically low levels of 40 cents which it dropped to a few years ago.

Perhaps this is an indication of added stability to come in this market—a reaction to the erratic developments of the past.

Anise Oil in Doubt

While the price of anise oil remained at $2.20 last month at the lower range, there were signs that the supply may become quite limited in the months ahead. Most of the materials has been reaching this country from Dutch sources. Several spokesmen in the trade stated that the U. S. Government may attempt to block this source of supply as a further means of shutting off imports on products which originate from Communist China, inferring that Holland is acting as a go-between on this particular item.

Bois de Rose Up

This oil went up to $4.10 in April as a direct result of tighter conditions in Brazil. Available supply at the origin is on the limited side for the present; and the spot market is reflecting this situation in a higher price.

Cassia Oil Scarce

Like anise oil, cassia oil has not been coming through directly from China for quite some time, and this oil is very difficult to obtain in the spot market at the present time. While the oil is being quoted by dealers, most of them indicate that the $8.50 price is mostly nominal.

Patchouli Oil Steady

Patchouli oil remained at $7.75 last month, with the demand and replacement stocks maintaining a steady pace.

Bergamot Oil Steady

The price of bergamot oil remained in the range between $12 and $14 last month, with reports that replacement costs from Italy had begun to drop a slight amount.

Lemongrass Oil Unsteady

There is a variety of reports circulating in the trade concerning this oil. Although the price appeared to remain at $1.30 at the lower end of the range, there were segregated cases of lower figures, extending down to $1.15 a pound.

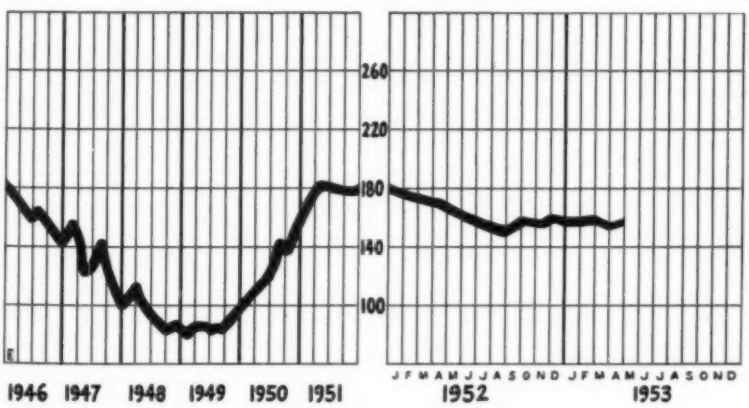
Some authorities attribute the sluggishness to the fact that lemongrass consumption has been cut by a considerable amount, as far as Vitamin A is concerned. These spokesmen attribute the fluctuating trend of this oil in part to this occurrence.

Lime Oil in Good Shape

Demand for lime oil was moving along at a very good rate, and coupled with that, prospects for new-crop material appeared more than enough to take care of the industry's needs.

The distilled oil remained at $6.35, while the distilled material advanced 10 cents to the level between $7.85 and $8.50.

15 Essential Oils—Weighted Price Index. 1926=100



The essential oils index advanced from 153.9 to 157.9.
Bois de rose, cassia and lime oils were higher; geranium oil was lower.

Silicones in Medicine and Pharmacy

(*Continued from page 617*)

by body fluids. If it is necessary to remove the silicone film, acetone or a mixture of three parts of ethyl ether and one part of alcohol may be used.

Acceptance of silicone preparations by dermatologists is indicated in Denton's[10] report on skin protective agents. He advises that such products be used as protectives against various aqueous chemical solutions.

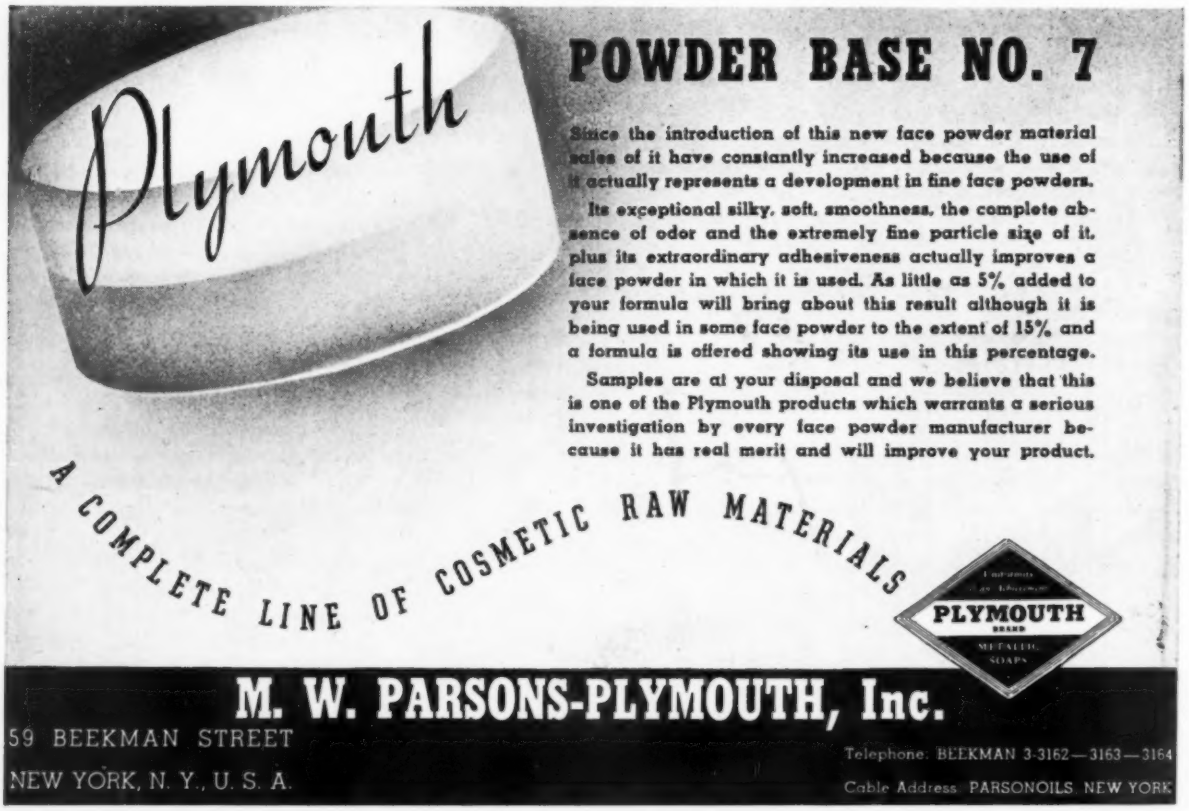
In the meantime, several investigations are going on to determine the value of silicones in other types of dermatologic products. Illustrative is the recently reported study by Plein and Plein[6] of silicone oils as dermatologic vehicles. In their investigation, which provided considerable basic data, the compatibility of silicone oils with standard substances used in formulating dermatological bases was tested by incorporating 42 other vehicles with each of three silicone fluids of widely varying viscosity. Cetyl alcohol, theobroma oil, diglycol stearate S, glyceryl monostearate, hydroxystearin sulfate, lauric acid, wool fat, polyethylene glycol 400 monostearate, stearic acid, stearyl alcohol, and Unibase produced good binary mixtures with silicone oils. Mixtures of silicones with Carbowaxes, soft soap and glycerine were not stable, while waxes had a tendency to appear as granules in the mixtures. Silicone oils were found to be practically immiscible with vegetable oils, liquid petrolatum, some of the acids, and some of the alcohols, including cholesterol.

Plein and Plein also investigated a series of emulsifying agents for the silicone oils. They found the most satisfying emulsifier of the group was a mixture of polyoxyethylene-4-laurate (Atlas G-2125) and polyoxyethylene-6-laurate (Atlas G-2126). However, several other emulsifying agents produced good stable emulsions of the dimethylsiloxane polymers and water.

Using these data, the investigators devised six silicone oil ointment bases, including silicone hydrophilic ointment, silicone cold cream, silicone anhydrous base, silicone Gibson base, and silicone glyceryl monostearate base. A study of the physical properties of these bases was made, including determinations of their stability at four different temperatures.

In addition, these silicone bases and three official ointments were tested for compatibility with 17 medicaments commonly prescribed in ointments. It was found that the silicone ointment bases compared favorably with the official ointments in both ease of mixing and stability. Similar comparisons were made between the silicone ointment bases and the three official ointments with respect to the rate of diffusion from them of iodine, sulfathiazole, and a mixture of benzoic and salicylic acids. Again the silicone preparations compared favorably with the official ointments.

Plein and Plein also investigated the use of silicone oils in the preparation of liniments. In these tests, they substituted silicone fluids for the liquid petrolatum and vegetable oils employed as liniment bases in official and semi-official formulas. It was found that silicone


Plymouth
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oil liniments were pharmaceutically similar to the accepted formulas. Moreover, in the opinion of the investigators, silicone oils are advantageous in such products because they are odorless, not subject to rancidity, and their wide viscosity range allows variation in liniment viscosity.

The usefulness of silicones in dermatology is also indicated in Elson's[11] patent which describes the use of these materials in improved compositions for treating and removing corns, callouses and other undesirable keratin. Such silicone exfoliative compositions, in addition to being very stable under a wide range of conditions and adaptable to various requirements, are said to be outstanding with respect to reduced involvement of healthy tissue. A typical preparation of this kind, with salicylic acid as the keratin-exfoliating agent and starch as a filler, is given as follows:

Silicone (methyl silicone, 30,000 cts.)	**30 per cent**
Salicylic acid, powdered	40 " "
Starch	30 " "

Before leaving dermatologic preparations, mention should be made of the use of silicones in permanent wave preparations, particularly products for colored people. In discussing such uses, McGregor states that after the hair has been washed and dried, it is treated with a silicone emulsion. It is then combed with a metal comb heated to about 300° F. This straightens the hair, after which it can be set as desired. The advantage is that the hair is much less affected by rain or humidity and the "setting" lasts much longer.

The potential uses for silicones in orally administered products are suggested in procedures developed by Yen and Stirn[12] for coating pills, tablets and capsules to render them moisture-repellent, odor-free and resistant to various deteriorating influences. Thus, tablets may be provided with a silicone resin coating which gives them a comparatively high gloss, smooth finish, and non-dusting film, insures the constancy of the dose, and greatly decreases the number of broken, nicked and defective tablets. When gelatin capsules are given a silicone film, they will maintain a clear, unspotted appearance, even in the presence of high humidity for a long time, and the coating will provide increased protection to the capsule contents, with much less tendency to parting during shipment and handling. These benefits, it is claimed, are attained without appreciably delaying the absorption of the therapeutic materials after injestion. Such coatings may be applied to tablets or capsules by allowing vapors of the silicone resin to contact the materials or, preferably, by dissolving the silicone resins in suitable solvents and submerging the tablets or capsules in the solutions.

The actual manufacture of tablets and capsules may be facilitated by utilizing the efficient anti-adhesive or "parting" action of the silicone fluids. Thus, capsules are removed more readily if the "fingers" on which they are formed are given a light silicone coating. Similarly, tablets show less tendency to stick, if the molds are treated with silicone.[3]

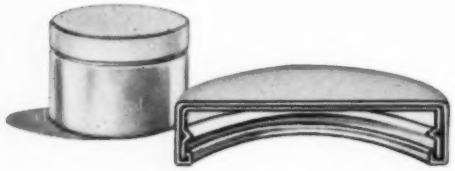
Internal treatments based on the efficient antifoam action of certain silicones offer interesting and perhaps life-saving applications for these materials. A silicone may be useful, for example, in treating people with pulmonary edema or "fluid in the lungs," which usually results from heart or kidney ailments. Such patients are constantly threatened with the possibility of churning the fluid into a foam. When this happens, the upper respiratory system becomes foam-filled and this may lead to death from internal drowning. According to one recent report,[13] research workers at the University of Michigan have found that the froth can be reduced to liquid by inhaling a silicone spray; keeping the lungs foam-free until the cause can be corrected. The investigators say that the silicone treatment is more effective than any previously known. In addition, the patient can administer his own emergency treatment by inhaling a silicone mist from an ordinary hand atomizer.

The veterinary medical field may also benefit from the antifoaming properties of silicones. One such preparation, called Tympanol, has been used successfully for relieving "bloat" in cattle. In many cases, the foam which causes the distress has been broken by direct injection of this silicone suspension into the rumen.[3]

Pharmacologic studies[14] have shown that a silicone employed for its antifoam action has a low order of toxicity. Moreover, extremely small amounts of silicone are required to prevent or suppress foam in a wide variety of aqueous and non-aqueous systems.[15] The pharmaceutical industry is making good use of this property in order to more efficiently utilize kettles, stills, tanks, and other processing equipment. It is used for example, in the fermentation tanks for the preparation of certain antibiotics, to eliminate foaming and speed operations when high speed mixers and colloid mills are used, and to obviate troublesome foam during the bottling of various solutions. In the latter instance, a minute amount of silicone in the solution or applied to the neck of the bottle will eliminate this annoyance. A silicone anitfoam spray, dispensed in a low-pressure, alcohol container, is available to facilitate many laboratory procedures.[16]

The ability of silicone-treated glass surfaces to repel moisture has been the basis of many practical and novel applications for these materials in medicine and pharmacy. As explained by Thomas,[17] silicone fluids can produce a durable surface coating on glass, ceramics or metal. This coating will tolerate heating to 150° C. and will withstand the action of organic solvents, acids, soaps or detergents. Formerly, treatment with hot caustic alkali solutions were required to remove the silicone film, However, a method has been developed, called the Detrex SC process, in which the silicone is converted to a soluble product that is readily rinsed off the glass surface with plain water.

In the medical field such silicone treatments have proved particularly valuable in many phases of blood work. Of primary importance is the use of silicones in needles, syringes, glass tubing and other vessels in-



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tended to contain blood for the purpose of preventing or delaying clotting.[18,19,20] Thus, the silicone treatment of needles prevents clotting during blood transfusions.[21] Similar employment of silicones in blood collecting equipment is of definite benefit in the handling and storage of blood. Through the use of silicone-coated glass chambers, it has been possible to devise more efficient "artificial kidneys" for use in cases where normal kidney function must be interrupted temporarily.[22]

By using silicone-coated tubes, it has been possible to make more accurate determinations of blood coagulation time.[23] Such modified techniques have resulted in the improved diagnosis of early cases of phlebothrombosis and pulmonary embolism.[24]

Silicone, water-repellent treatment of vials and bottles makes for more rapid, cleaner drainage and less waste with liquid products like procaine penicillin. These and other advantages are clearly indicated in Goldman's[25] patent describing the formation of a film-preventing lining for such containers. He explains that in order to prevent wastage of aqueous pharmaceutical preparations through the formation of films on the contailer walls, the inner surfaces of the vials or bottles are coated with a layer of silicone dissolved in a volatile solvent. The deposited silicone coating is then heat-treated to bake it on.

Goldman has found that by using such silicone-coated vials, the excess percentage of procaine penicillin suspension for a 15 cc. vial can be reduced from 22 to 15 per cent, and for a 4.5 cc. vial it can be reduced from 22 to five per cent. In addition to reducing the "overage," such silicone treatment causes the penicillin suspension to drain rapidly from the walls of the vial and makes it possible to see the liquid level immediately and distinctly.

The rapid and complete drainage and flat meniscus made possible with silicone coatings on glass graduates, burettes and other volumetric apparatus have served to improve many laboratory techniques and heighten their accuracy.[18,26] In addition to simplifying operations and improving analytical accuracy, the silicone treatment often eliminates the need for rinsing, washing and drying glass apparatus. Thus, as explained by Gilbert,[27] siliconed pipettes drain completely clean and dry, just as though the contents were mercury. Usually no rinsing is needed between pipetting of different solutions.

The non-volatile silicone fluids with high flash points have also proved to be suitable for use in high temperature baths that can be operated safely for long periods without deterioration.[18] These properties also account for the growing use of silicones as the fluid media in sterilizing baths for syringes and surgical instruments.[28,29] As compared with mineral oil, which is commonly used as a sterilizing medium, the silicone fluid has the advantages of not charring or smoking at sterilizing temperatures even when used repeatedly or for prolonged periods.[3,17]

The silicone fluids are also useful lubricants and their ability to prevent sticking has found a number of im-

portant industrial applications. In the medical field, this property is proving useful in the protection and treatment of syringes and surgical instruments. For example, as indicated by Darling and Spence,[30] the plunger of a syringe can be lubricated with a silicone and, after repeated autoclave sterilization, will present a clear appearance with no evidence of charring and no tendency to stick. They also pointed out that the silicone is chemically inert and appears to have no effect on blood samples taken for hematologic, bacteriologic, or biochemical study. Furthermore, the water-repellent properties of the silicone makes for easier cleaning after use.

These water-repellent and lubricating properties of the silicone oils have been utilized by Crowe[31] in the maintenance of surgical instruments. In his procedure, the silicone is applied to the instruments prior to boiling or autoclaving to insure free action of the instrument after sterilization. Both old and new equipment showed a freedom of action even after the most vigorous sterilization. It was also found that cleaning time was appreciably reduced, and the instruments required less lubricating; often going through three or four sterilizations without further silicone treatment.

In addition to their general laboratory utility silicones no doubt will find many uses in the more specialized fields of research. Illustrative perhaps is the way in which aerobiologists[32] have learned to use the silicones. They have found that slides coated with silicone grease are superior to petrolatum-coated slides for collecting micro-organisms from the air. Furthermore, the difficulty encountered with agar plates which freeze when exposed from airplanes has been overcome by using sterilized Petri dishes lined with silicone grease. Later, when melted agar is poured into the plates, the bacteria and fungi will grow out satisfactorily.

Mention should also be made of the quite unique silicone "bouncing putty." As remarked by Rochow[2], the various forms of this compound are intermediate between silicone oil and silicone rubber; forming plastic and elastic masses. In a patent describing the production and applications of these bouncing putties, Wright[33] suggested that such a product could be put to therapeutic use for patients in need of hand exercise. Because of this value for some kinds of therapeutic exercise for the hands, the A.M.A. Council on Physical Medicine and Rehabilitation[34] has included silicone bouncing putty in its list of accepted devices.

From the foregoing, it is quite evident that only a few of the possible uses for the silicones in medicine and pharmacy have been investigated. It is also evident that these materials have tremendous potentialities. It is thus easy to agree with Rochow[2] that "organosilicon chemistry has entered its fruitful age."

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(*Continued on page 692*)

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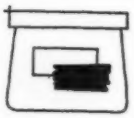

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French Lavender and Lavandin Industry

(*Continued from page 619*)

lavender producers soon followed the example of this firm, and sizable steam distilleries sprung up in several villages of the producing regions. Naturally these distilleries required large quantities of plant material which no longer could be supplied exclusively from the wild lavender growing scattered on the slopes of mountain ranges. Hence, efforts were made to cultivate lavender on regular plantations, which would make harvesting of the plants much easier. Considerable money was spent on these plantations, especially during the years after World War I, but unfortunately the high hopes of certain growers and agricultural experts did not materialize. From several causes unknown at that time most of these plantings perished prematurely, i.e., before the initial investment could be amortized, and lavender flowers from plantations proved to be uneconomical. The high mortality on the plantations was attributed to various factors, or combinations of factors, none of them definitely proved, viz., careless selection of the site, crowded planting, fertilizing too late in the season, cutting of the plants too close to the ground, damage by insect pests, and root rot. It was only recently that the real causes for the premature decline of the lavender plantations became apparent. Growers now know from experience that true lavender is a delicate plant that perishes readily unless properly cared for. Today plantings are laid out only in the higher altitudes on easily drained mountain slopes, and in calcareous, loose soil—the natural habitat of wild-growing lavender. Low altitudes are not suitable at all, and moist patches in a field do a lot of damage. The plantings require a great deal of cultivation; they must be kept free of stagnant moisture, and of weeds. The latter may influence the quality of the oil, and as in the case of peppermint, affect the odor adversely.

The mountain regions of the Departements Basses-Alpes, Drome, and Vaucluse, where lavender is culti-

vated today at altitudes ranging from about 700 to 1,100 meters are quite barren because of age-old soil erosion. Aside from lavender and small quantities of cereals (wheat) and potatoes, no other crop can be raised on those steep slopes. Fields are by necessity small, and all work (planting, cultivating, and harvesting) has to be done by hand, or at best, with the help of a horse. Machines are useless. Compared with wheat and potatoes, the growing of lavender, under these circumstances, still brings some modest returns. Lavandin cannot be raised in these altitudes as it would freeze in winter. Cold and snow in winter, and heat in summer, on the other hand favor lavender. Heavy rain showers during the growing period in spring and plenty of sunshine before the harvest will increase the oil yield. Practically all lavender fields are little more than patches, so to speak, usually not exceeding one hectare. Planting is done by means of slips taken from older, carefully selected stock. The rows are now spaced 1.7 to 2.0 meters apart, the plants in a row 0.5 to 0.6 meter apart. This facilitates cultivation with horse-drawn plows. A newly established field requires three years to attain full productivity. After 10 to 11 years it starts to decline and finally becomes uneconomical. Harvest takes place in August during full bloom, after the earlier characteristic blue lavender color of the flowers has changed to a grayish-blue. Cutting of the flowers is still done by hand, with the help of sharp sickles; no mechanical cutter having been invented. About 130 kilograms of plants are required to yield 1 kilogram of oil. On the average, 1 hectare produces 30 kilograms of lavender oil per year. Compared with the yield of lavandin this is very little.

Distillation of the plant material is now carried out more and more in the recently introduced, and very efficient Prince and Eysseric stills; details about these will be given below.

A few words should be added here about the wild-growing lavender which prior to World War I was the only plant material available for distillation. This thrives on sunny, barren mountainsides, up to 1,300 meters, in the form of clusters or tufts growing between rocks, and often widely scattered. To cut and cultivate this lowly plant is a heavy and backbreaking task. To collect a few hundred pounds of plants the harvester has to cover large distances over rugged territory, stooping all the time to cut the little stray plants. In the summer heat of Southern France this is no easy job, and few are the men willing to make their livelihood in such a primitive way. Except for some rugged individualists who love nature and independence no one today can be persuaded to this task, and collection of wild-growing lavender has declined to very low figures. It was not always so; before World War II the standard of living in Southern France was low, but today wages have increased substantially, and there are much easier and more remunerative ways to earn one's living even in the remote rural areas of Southern France. Moreover, wild-growing lavender seems to be disappearing gradually; whole mountain slopes once covered with

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•

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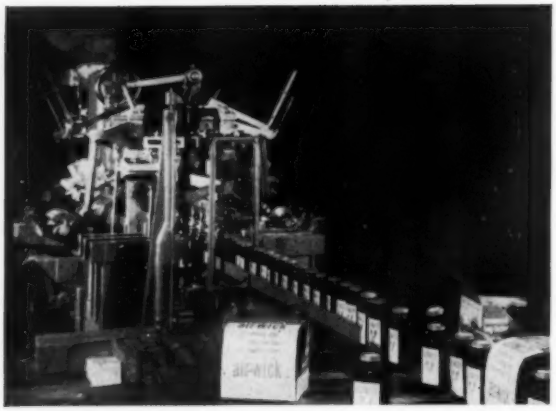

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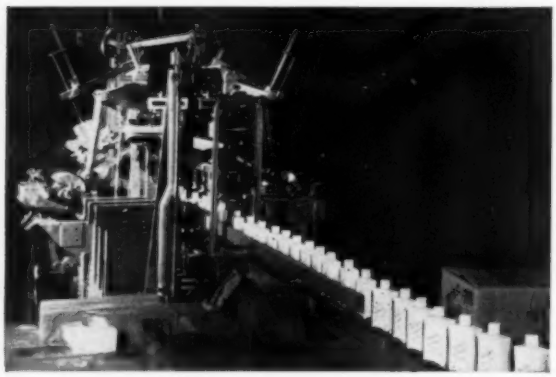

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bluish lavender now appear quite denuded of it. Several explanations have been advanced for this fact: a rot disease, perhaps a fungus, appears to have attacked the roots; because of the large-scale reforestation program carried out by the French Government, the fragile lavender is being crowded out by the more vigorous pine trees, scrub and underbrush; due to this tough new vegetation, browsing sheep and goats now have less to feed on, and will munch even lavender in the spring, before the oil has developed in the young plants. Whatever the causes may be, the wild-growing lavender seems to become less and less, with collection increasingly difficult and costly. Only the plants growing in the vicinity of villages, or distillation units can now be gathered economically.

This has brought about a market shift in the centers of lavender oil production. Former well-known centers of distillation (mostly from *wild-growing* flowers), such as, Barreme, Castellane, and Gevaudan (all in the Basses-Alpes) have lost their importance, being replaced by other centers, such as, Lambruisse, St. Andrè, Barles (all in the Basses-Alpes), Sault (Vaucluse), and Nyons (Drôme). Oil of highest quality now originates from Lambruisse. At the same time these latter localities have become centers of planted lavender also; as we pointed out above, growers have learned by long and costly experience that lavender can be cultivated successfully only in places where wild lavender thrives, viz., in its natural habitat.

For all these reasons the total yearly production of lavender oil has decreased substantially. About 25 years ago it amounted to about 150,000 kilograms; today it averages 50,000 kilograms in normal years.

Oil of Lavandin

While production of lavender oil has fallen off that of lavandin oil has greatly increased in recent years. In 1939 it was about 100,000 kilograms; now it amounts to approximately 300,000 kilograms in years of normal weather. There are several causes for this development: although sensitive to the cold prevailing in the higher altitudes where true lavender grows, lavandin in general is a hardier plant withstanding much hotter weather, and easier to cultivate. It grows best in altitudes ranging from 300 to 900 meters, where the summers would be too hot for true lavender. This is the region of extensive high plateaus, especially in the Basses-Alpes, which lend themselves well to large-scale cultivation of lavandin. Because of the flat terrain, mechanical farming implements (tractors, cultivators, trucks, etc.) can be used to great advantage. Owing to the greater hardiness of lavandin the plants usually last longer than those of true lavender, twelve years being quite normal. The greatest advantage of lavandin over true lavender consists in the much higher oil yield of the former per acre. The usual type of lavandin yields from 50 to 60 kilograms of oil per hectare per year, while the newly introduced "Abrial" variety (see below) produces as much as 100 and even 120 kilograms of oil per hectare per year. This equals approximately four times

the yield of true lavender oil. Under these circumstances it is not surprising that in recent years many growers have switched from lavender to lavandin.

As in the case of lavender, planting is done by means of slips taken from older, carefully selected stock. For easier cultivation with farming machinery the rows and plants are now spaced widely, viz., 2 meters between the rows, and 1 meter between the plants in the row, which means 5,000 stocks per hectare.

Harvesting takes place in August, after the blue color of the flowers has changed to gray. Cutting of the flowering stalks is still done by hand with sickles, and this today represents the heaviest item in the cost calculation of the oil. There is hope, however, that within a year or two an engineering firm in the south of France may perfect a mechanical cutter now under experimentation. Once this has been accomplished, the cost of cutting will be substantially reduced, and lavandin oil can then be offered on the market at prices permitting even more extensive use of this oil for the scenting of soaps. In fact, because of heavy production, prices have already decreased to levels quite attractive to soap manufacturers, and there is every hope that in the future lavandin oil will be one of the most economical adjuncts at the disposal of the soap maker. Moreover, the quality of the oil has recently been materially improved with the large-scale introduction of *Lavandula hybrida* Abriali,[1] a variety of lavandin discovered some years ago in the Drôme by a French Government botanist for whom the plant was named. The oil derived from this variety contains as much as 30, and even 32, per cent of esters, against 15 to 24 per cent in the old type, hence approaches the character of true lavender oil. Its odor is stronger than that of the regular lavandin oil. And as mentioned above, the Abrial variety yields from 100 to 120 kilograms of oil per hectare, viz., twice as much as the old type of lavandin. It is primarily for this reason that most lavandin growers are changing to the Abrial variety as quickly as conditions permit. This simply means that as soon as the old plantations reach the point of unproductivity they are replaced with new ones of the Abrial variety. Already from 20 to 30 per cent of the total production of lavandin oil is derived from the Abrial variety.

Present centers of lavandin oil production in the south of France are:

1) St. Jurs, Riez, Valensole	All in the Basses-Alpes; 150,000 kilograms in normal years.
2) Puimoison, Moustier, Allemagne, Montagnac	Also in the Basses-Alpes; about 85,000 kilograms in normal years.
3) Nyons	In the Drôme; about 60,000 kilograms in normal years.

The visitor driving through these regions will be surprised by the extent and beauty of the lavandin

[1] *Parfumerie moderne* **19** (1935), 503.

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plantations, especially on the high plateau of St. Jurs.[1] During the second half of July, just before full bloom, these fields offer a magnificent view: under the blue cloudless sky as far as the eye can see, rows and rows of fully developed lavandin, thickly crowned with blue flowering tops, all fields meticulously clean. Most growers have now learned from experience that good field management pays well in the case of lavandin. During the harvest, trucks carry large quantities of the cut plant material to the distilleries for processing in modern large steam stills. As in the case of lavender distillation, most of the former small field stills seem to have disappeared, having been replaced either by conveniently located steam stills of large capacity, or by the recently introduced Prince or Eysseric stills. In fact, these latter have been found so efficient, and so time- and labor-saving that they are gradually replacing even the large direct steam stills; they are virtually revolutionizing field distillation of lavender and lavandin oil, and perhaps that of other aromatic plants. For this reason it may be interesting to discuss the new apparatus briefly.

The Prince and Eysseric Stills

Fundamentally these two types of stills are based upon the same principle. The new distillation units consist essentially of a large tank (vat or retort) surrounded on the sides and bottom by a closed water jacket in which water is brought to a boil by a fire beneath. The low pressure steam thus generated in the water jacket is conducted into the retort, and serves for distillation of the plant material charged above a perforated false bottom. Since the side walls of the retort are kept warm by the boiling water in the enclosing steam jacket, no internal condensation of live steam can take place within the retort. The plant charge remains comparatively dry throughout the operation, and distillation of a charge of 200 kilograms of plant material in a vat of 1,000 liters capacity can be completed in 20 minutes—against 50 minutes in the old types of steam stills. So short a distillation in a retort of relatively large capacity means a saving of at least one-half of the labor. Moreover, the exhausted plant material (which is easily removed from the still by mechanical hoists) is usually so dry that it can be dropped immediately, and without sun-drying, into a shoot leading to the large specially constructed fire hearth below the still; it is in fact, the only fuel required for the generation of steam, and does not have to be sun-dried and carted back to the distillery—a further saving of labor. The use of low pressure steam and the short length of distillation reduces hydrolysis and other forms of decomposition within the still to a minimum; the resulting lavender or lavandin oils exhibit a fine odor and a higher ester content than the oils produced in the old type of steam stills.

[1] For some of the data contained in this paper the author is indebted to his good friends Pierre and Jean Chauvet, with whom he had a lengthy visit last summer, in St. Jurs, Basses-Alpes.

Conclusion

The French lavender and lavandin industry has undergone substantial changes in recent years. Production of oil of lavender has decreased markedly, while that of lavandin has increased many-fold. The latter oil has become a most useful and economical raw material for the perfumer and the soap maker.

Mennen Today — and Yesterday

(Continued from page 615)

How Gerhard Mennen's head would swim if he could see this plant today! Quite different from the bustling drug store he established on the corner of Central Ave., Newark, in 1879. He was 29 years old then and had worked his way through New York College of Pharmacy Evening School as a butcher's helper and a druggist's clerk. The way he formulated his first product, "Corn Killer," and the ambition and ingenuity with which he promoted its sales proved even from the first day that the young Mennen concern was destined to be a great company.

Not content with the mere manufacture of the product, he toured the entire state of New Jersey, and neighboring areas, with horse and wagon, and with a professional entertainer who attracted audiences with dance and song. Each time he had a large enough crowd gaping at his wagon, Gerhard would stand up and tell the people about the great virtues of his Corn Killer—but he never sold a single bottle from the wagon, as was the custom of most peddlers.

By this time, his eager listeners anxious to buy the product, Mennen would announce that it could be purchased in any drug store. In this way, he made just about every drug store in the state of New Jersey a potential sales outlet for this Corn Killer.

A startling business method for that day. But not for Mennen.

It was during these early days that Jake Manheimer, that omnipresent essential-oil man, met this immigrant pharmacist. Jake, now president of J. Manheimer, was at that time, 1892, a salesman of essential oils and perfumes. Of his friend's drug store, he says, "The entrance was a small doorway, and the sign was freshly painted. There were no machines so big then, no huge kettles, no staffs, no chemists and administrators. The "plant" was in the back.

"If you came in during the day, the way I did the first time, you would likely not find any one in the front of the store. But in the back, you would hear noises of a man tinkering with a small machine, humming as he worked along."

Mennen had already set his course. Three years before Jake met him, he introduced in 1889 the very first talcum powder, only after much arduous research and many detailed talks with leading physicians. Called Mennen's Borated Toilet Powder, it was the first

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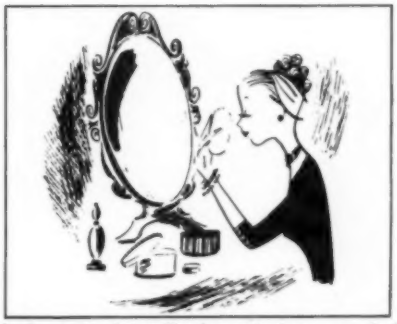

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powder ever to be marketed which was made of Italian talc blended with boric acid. Not only that, it was the first product ever to be packaged in a tin can, and with a sifter top.

This time, in acquainting the public with a new product, young Mennen strove for *national* advertising by hiring the network of circus billboards across the country. He had discovered that in the off-seasons, when the circus, theatre troupes and carnivals were idle, these billboards were idle too.

People everywhere soon wanted the new talcum for babies. As Jake says, "It turned out to be the first, original national advertising."

This was the dynamic young man who one day confided in Jake Manheimer, "Y'know, I think men would use talcum powder if it were scented."

"I thought he was going too far," Jake relates: "I told him that men don't use perfume smells. When I think now how daring an idea it was, I have to laugh a little. In those days, if you even suggested that a man use anything that smelled of perfume he would look funny at you.

"Well, he did put the perfume in, and I sold it to him. It was a lucky day, all right, because the Mennen name began to be a household word."

And the talcum went on to become the leader in its field.

The Gerhard Mennen Chemical Company, which changed its name to the Mennen Company in 1919, suffered a severe hardship in 1902 on the premature death of the founder. Mrs. Mennen, the former Elma C. Korb of Newark, carried on in her husbands place as a very capable president at a time when women were frowned on in business positions. Her brother, John J. Korb, helped carry out policies of the company, and in 1908, William Gerhard Mennen, her son, entered the firm to handle the manufacture and promotion of Mennen products.

He was soon adding the familiar Mennen spark to the organization and by 1912 began to manufacture and package shaving creams in tubes, supplementing the conventional shaving soap mug and stick.

Bill Mennen became president in 1916, a post he has held ever since. Under his guidance, and the later work of his two sons, William G. Mennen, Jr., and George S. Mennen, the company chalked up new firsts and accomplishments from year to year.

There was the first talcum to be manufactured with a neutral tint (1914) especially for men; Mennen Skin Balm (1924), an after-shave lotion in cream form; Mennen Menthol-Iced Lather Shave Cream (1928), a shave cream imparting a cool, soothing sensation; Antiseptic Baby Oil (1929); the first time a preparation had been made exclusively for a baby's skin; Skin Bracer (1931); Quinsana (1941), a preventive against athlete's foot; Baby Cream, Castile Soap and Tips for Tots, all introduced in 1947; Mennen Cream Hair Oil (1948); Baby Magic (1950), a liquid cream to prevent diaper rash and check diaper odor; and Mennen Spray Deodorant "For Men," the first spray deodorant ever to be

made exclusively for men: and Foam Shave, an aerosol shaving cream, the company's two newest products.

Here stands the most persuasive testimonial to the quality and popularity of Mennen products—Skin Bracer, 22 years old, and today the nation's largest-selling, popular-priced after-shave lotion. There is Antiseptic Baby Oil, which succumbed to the penicillin era and was changed to Baby Oil with Lanolin. This oil is one of the leading products of its kind on the market. There's Quinsana, 12 years old, and now the country's number-one athlete's foot powder. Talcum for Men with neutral tint, first marketed 39 years ago, in 1914, is a leading seller by a very large margin, while the lather, Menthol-Iced, and brushless shave creams, have all been among the leaders for many years.

The other products, some new, some old, making up Mennen's current list of 15, are either advancing fast in popularity, or have established a firm niche in the world market.

In order to maintain this high-quality record among its export branches, Mennen has laid down a set of rigid rules on quality control. Every foreign manufacturer must submit samples of each new batch of cream, lotion, or powder to the Quality Control Laboratory in Morristown. Before a single package can be sold, these export branches must wait for a favorable reply, not only on the finished product itself, but also on the package details used for that product. Each export branch must furthermore keep duplicate samples on its own shelves, for two years after manufacture, and these must be clearly marked and catalogued.

Mennen in Morristown has a reference room, just like a library, only instead of books, there are little sample bottles lining the shelves. All these sample bottles represent a complete and total record of every single batch that has been produced in the current two-year period—produced, not only in Morristown, but also in Cuba, Canada, the Philippines, and all the other foreign plants.

If Mennen receives a single complaint on any of its products, the authorities can determine in a short time which plant made it, which batch it occurred in, and then they can go to the sample of that batch on the shelves, and seek to determine the cause.

All in all, Mennen deals with 65 countries throughout the world. Some do their own manufacturing of Mennen products. Others receive the raw materials from Morristown, U.S.A., and do their own packaging. To the balance of the 65 countries, Mennen exports directly from the American headquarters.

In order to keep its products before the world audience, Mennen advertisements appear in countless local-language and international publications around the globe, encompassing eight or 10 different languages and many dialects. These advertisements, like the products, must all be approved by Morristown before publication.

Another important outlet for products of the Mennen Company is handled by its Military Division, which

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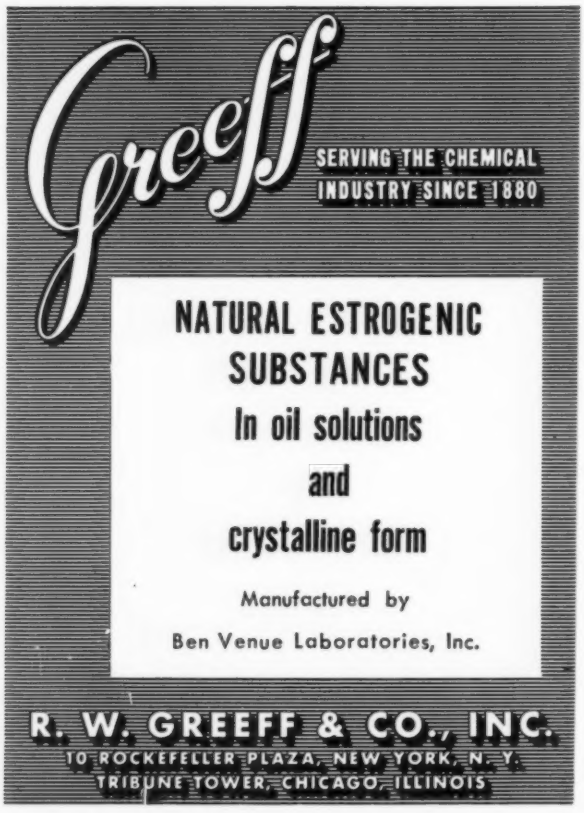

had its greatest rush of business during the second world war. At that time, Mennen was sending well over 50 per cent of its products to the armed services; today the company diverts approximately 15 per cent of its gross stocks to the military, and 85 per cent to the civilian market. The Mennen Military Division still has its exciting moments, though, like the order of assorted merchandise for overseas shipment in 1952 which filled 11 railroad freight cars.

To make sure all its salesmen are constantly on their toes and briefed with the latest developments, the Mennen Company holds a sales school from time to time for United States sales people. The course lasts two weeks within the plant, and one week in the field. Foreign members of the sales staff are invited to attend at any time, but the class is primarily for domestic personnel.

As a token of thanks to all the men and women who have helped put the Mennen Company where it is today, the organization gives a party once a year—the Peddler Party. Any one who has aided in the business during the year receives a card of the Mennen Peddler Association—whether he be executive, janitor, trucker, or a policeman on the corner—and he is invited to the party.

In honor of his close association with Gerhard Mennen, and his long, devoted friendship with Bill, Bill, Jr., and George, the beloved Jake Manheimer is Number One Peddler, and each year receives his Peddler card to prove it.

Jake sums up the vast accomplishments of the Mennens by saying, "I'm not quite like the others who look at this new Mennen plant in Morristown, and then go on their way. I stop and look up in wonderment at the huge entrance and at the big polished steel letters that read, "Mennen."

"I smile a little, because I can remember back.

"This is the work of Gerhard's son, who has raised a fine family. He's known in our business as the kind of man his father was—hard working, ambitious, and able to think of ideas that change the industry.

"I think of the day when a man will be able to throw away his razor and blades, put on some kind of nice-smelling cream and just wipe it off, and his whiskers with it.

"You know, I get a feeling that when it happens, it will be the Mennens who do it."

A. D. M. A. Meeting

(*Continued from page 625*)

earthy and aimed with as much directness as we could summon to the single purpose of protecting the business rights of member firms.

"In the first field we classify our joint efforts with the Food and Drug Administration to repair the breach in factory inspections that was caused by the Cardiff decision of the Supreme Court. In the latter category we should probably classify our continued efforts to

modify the regulations of New York City to the end that antibiotics salable over the counter in all other parts of the country can likewise be sold across the counter in that metropolitan center. So also should we classify our resurging fight against efforts of the World Health Organization to arbitrarily select generic names for drugs without regard for private property rights, without even primary rules of procedure and for rights of appeal, and without sufficient study of such proposed names to even scratch the surface of the ultimate effect of their selection upon drug nomenclature.

"Probably some middle ground would do for the classification of our activities in the tax field where we have sought modifications in the existing laws—if they are to be continued—to recognize certain inherent factors in drug development which logically call for different treatment than accorded other manufacturers. So also would we list our efforts to block passage of a bill in California the net effect of which would be to make legal the substitution of any drug for the one prescribed or called for by brand name."

Through effective work by members, the outlook was that the bill would most likely never reach the floor of the California Senate, said Mr. Harrop.

With regard to the New York City ban on over-the-counter sales of antibiotics which are sold over-the-counter in all other parts of the country, Mr. Harrop said that they were assured that if the legal officer of the city either rules that the industry's contentions are correct or that there is serious doubt as to the outcome of litigation, should the industry file for declaratory judgment, they would recommend to the city Board of Health that section 118-A be amended to bring it into conformity with the requirements of the Federal Food, Drug, and Cosmetic Act.

With regard to the factory inspections provisions of the Food, Drug, and Cosmetic Act, Mr. Harrop said:

"Mrs. Oveta Culp Hobby has made it abundantly clear, in our opinion, that the enactment of this bill is for the sole and limited purpose of eliminating the requirement that permission be granted before inspection can take place."

Mr. Harrop read correspondence in which Mrs. Hobby definitely put herself on record, saying:

"We are content to leave to the United States courts the problem of saying how far the authority extends. Efforts to change the substantive language in any way will involve heated controversy and is likely to delay enactment."

Mrs. Hobby's letters are to be read into the record at the congressional hearing on the bill, said Mr. Harrop.

Medical Section

Dr. Irwin C. Winter, chairman of the Medical Section, reported on the work being carried on by the subcommittees of this section.

The Subcommittee on Agranulocytosis, headed by Dr. Elmer L. Sevringhaus, in existence two years, is sponsoring two projects supported by funds from several member firms.

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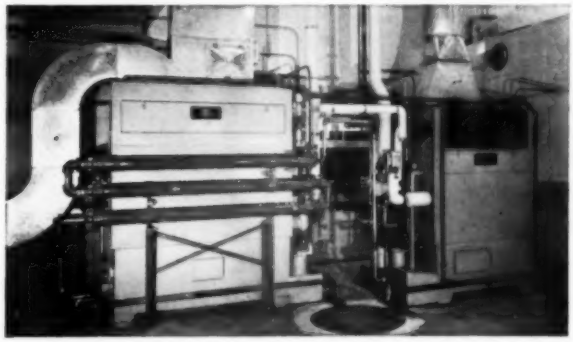

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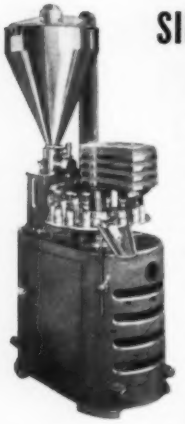

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Said Dr. Winter:

"It is much too early to predict that a practical and useful test for the granulopenic tendencies of a new drug will eventually be forthcoming. Nevertheless, two very suggestive leads have been uncovered . . . If either or both culminate in a workable test for such activity it will mark a real accomplishment."

The subcommittee on Skin Sensitization, headed by Dr. John A. Henderson, will study contact sensitivity that can occur after local application of medicinal agents. The patern to be followed will be similar to that employed by Dr. Sevringhaus in the agranulocytosis project.

Dr. Raymond M. Rice heads the Subcommittee on Medical Manpower. Dr. Stanton M. Hardy heads the Subcommittee on Ethical Publicity.

Contact Committee

Dr. Frank O. Taylor, chairman of the Pharmaceutical Contact Committee, reported that a new project this year concerns standards and methods of test for closures for parenteral solutions. A committee of 15 has selected a few tests, regarded as most essential, and uniform samples are being distributed for cooperative testing by the selected methods. The committee will present its findings and recommendations to the U.S.P. Panel.

A Subcommittee of 14 is working on sterility testing, and other subcommittees are working on pyrogen testing, chemical assay of epinephrine, nitroglycerine assays, progesterone injection assay, testosterone propionate assay, enteric coating standards, vitamin B_{12} assays, titration in non-aqueous solvents.

Electronic Ampul Inspector

Dr. Taylor reported that twenty electronic ampul inspection machines have been made and distributed to firms which originally contributed to the expense of the research. "Possible sources of inaccuracy have been found in the calibrator which controls the uniform accuracy of each machine," said Dr. Taylor. "A new type of calibrator has been designed and is to be put on each of these machines before further use. Experience so far has been limited and variable. Some laboratories have barely begun any practical tests of the machine on regular production. Others have experimented with runs of several thousand ampuls. Indications at present are that the machines give results comparable to visual inspection. Certain vagaries, as yet unexplained, have also occurred, partly due to the calibrator. A conference of all interested firms was held the day before the last Contact Committee meeting, and the RCA-Victor Co. is now arranging for a number of small conferences with the men actually operating the machines. No final judgment regarding this machine inspection can be made without a much greater volume of data than is yet available."

Research and Development

In reporting on the activities of Research and Development Section, Dr. George H. Schneller, of Calco

Chemical Division, American Cyanamid Company, said "It has been the policy of this Section to emphasize the administrative aspects rather than, but not to the exclusion of, the scientific aspects of research and development. And so the principal features of our meetings have been the prepared addresses as well as the informal group discussions dealing with various aspects of the general problem of coordinating the activities of the several groups within a research and development structure with each other, with other groups in the over-all business organization, and with the world at large."

"The Section has undertaken an unusual project in the form of a five-day conference on human relations," said Dr. Schneller. "The importance of human relations in the successful conduct of every phase of business, including research and development, is becoming increasingly recognized. . . . Research and development, steadily increasing in complexity and in the multiplicity of component elements, depend more and more on teamwork between individuals and groups. Teamwork depends upon good human relations, particularly in the behavior of supervisors. Most supervisors and administrators of research and development are scientists. But the scientific method in itself has little in common with the principles of human relations. A critical problem in research administration is the achievement of harmony between these two independent ways of thought."

Biological Section

Reporting for the Biological Section, Dr. H. A. Dettwiler said that a study of relative stability of biological products has been underway for approximately three years, and it has been definitely established that numerous cycles of freezing and thawing does not alter appreciably the potency of tetanus antitoxin. Evidence is accumulating demonstrating that many items are more stable than the present dating requirements indicate.

"The nature of biological problems usually necessitates a continuing study, covering several years or more before a practical solution can be reached," said Dr. Dettwiler. He also stated:

"It is apparent that industry must cooperatively study the conditions under which biologicals and related products are processed and filled. There is a distinct lack of comprehensive data on this subject and the data that is available is of little real practical value since the conditions of study vary from laboratory to laboratory."

Dr. Dettwiler said that a committee would be formed to study the conditions under which biologicals are processed, and similarly with respect to antibiotics and pharmaceutical products. It is expected that this group will become interested in developing standards of procedure for determining air contamination rates, to study the construction of processing and filling areas, the effect of personnel movement during operation,

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and become interesting in sterilizing devices to provide a low bacterial contamination rate in the air.

Production and Engineering

T. H. Marshall, reporting for the Production and Engineering Section, said that the meetings are devoted to production, engineering, maintenance, packaging, safety and allied problems. He listed the various papers given at meetings, and said that "the meeting theme is selected to meet the ever changing conditions of our economy and business. The round table sessions are built around the theme and allow for specialization within production and engineering."

Drug Recalls

U. S. Commissioner of Food and Drugs, Charles W. Crawford, said that of 20 drug recalls, nine had been of antibiotics, which had deteriorated after certification and shipment. Of the other 11, Mr. Crawford said that seven were cases which were initiated by manufacturers who notified the FDA of the necessity of recalling the products. The other four concerned products which the FDA insisted should be removed from the market. He said that the instances of the seven recalls instigated by the manufacturers themselves without any immunity from the penalities of law, were evidence of the character and realization of responsibility of these firms. He said that such action is the acid test and represents action to build character which could not be obtained from any amount of advertising.

Dr. Allan T. Waterman, director of the National Science Foundation, spoke on Federal Support of Basic Research. Stating that appropriations for applied research outweigh appropriations for pure research by the ratio of about four to one, he said that this is a most dangerous situation. The ratio, he said, should be four to one in favor of basic or pure research.

Health Information

Admiral W. H. P. Blandy, president of the Health Information Foundation, gave a detailed summary of Magnuson Report, which is the report submitted by the Commission on Health Needs of the Nation. This commission, appointed by President Truman, was headed by Dr. Paul B. Magnuson as chairman. Pointing out that the report covered a comparatively brief period, Mr. Blandy pointed out that the commission "did not have time for any organized economic or sociological field research, but had to content itself with statements of fact and opinion brought before it."

Since the HIF is "strictly a fact-finding and fact-disseminating agency" it is, therefore, not free to express any opinion for or against the report, said Mr. Blandy. However, he expressed the thought that "More information is needed. Fine as our health system is, no one can claim that the quality of health care is uniformly high in all parts of the country and for all levels of our population. Perhaps such a goal is impossible of complete attainment. But as our people become more and more health conscious, they will cer-

tainly strive for it. Unless sound financial methods, based upon thorough and accurate information are developed to approach this goal, there is always the danger of unsound methods, promoted by persons of more zeal than wisdom, being foisted upon the public. The result would be a general lowering of our health care standards."

New Officers

Donald S. Gilmore, chairman of the board of the Upjohn Company, was reelected president. Vice-presidents elected are: W. L. Dempsey, president of Sharp & Dohme; J. H. Fitzgerald Dunning, president of Hynson, Westcott and Dunning; Theodore G. Klumpp, president, Winthrop-Stearns, Inc.; and Ernest H. Volwiler, president of Abbott Laboratories. Melvin C. Eaton, president of the Norwich Pharmacal Company, was reelected treasurer. Dr. Karl Bambach continues as executive vice-president, and Leslie D. Harrop, of the Upjohn Company, continues as general counsel.

John C. Leppart, president of E. R. Squibb & Sons Division of Mathieson Chemical Corporation, was elected to the executive committee to fill the vacancy caused by Dr. Volwiler's election as vice-president. Others elected to the executive committee are: Adam H. Fiske, Eli Lilly & Company; George F. Smith, president of Johnson & Johnson; and Kenneth F. Valentine, president of Pitman-Moore Division of Allied Laboratories.

Schering Corporation was elected a member of the Association.

Winners in Golf

Winners in the golf tournament were:

Qualifying low gross, John G. Searle; Tournament low gross, Daniel C. Searle; Tournament low net and winner of the President's Trophy, C. Braxton Valentine; 1st Flight low gross, F. M. Hadley; 1st low net, W. H. Lycan; 2nd low net, Stuart V. Smith. 2nd Flight low gross, John A. Cawley; 1st low net, Kenneth Perry; 2nd low net, J. H. Fitzgerald Dunning. 3rd Flight low gross, Walter Nay; 1st low net, Wesley Gilman; 2nd low net, William R. Wiley. 4th Flight low gross, Paul E. Tillman; 1st low net, Harold Upjohn; 2nd low net, Charles F. Miles; 5th Flight low gross, Gerald F. Pauley; 1st low net, S. B. Gilpin; 2nd low net, W. H. Mclean. 6th Flight low gross, H. S. Wilkinson; 1st low net, R. A. Clark; 2nd low net, C. D. Smith, Jr,. 7th Flight low gross, John Gaston; 1st low net, W. O. Brewer; 2nd low net, H. E. Thayer. 8th Flight low gross, Mrs. Kenneth Perry; 1st low net, Mrs. P. F. Ziegler; 2nd low net, Mrs. George Smith. Guest prizes low gross, Stanley J. McGiveran; 1st low net, John R. Dilworth; 2nd low net, H. M. Dunlap; 3rd low net, Robert A. O'Malley. Longest drive, Theodore Weicker. Closest to pin, William W. Huisking. Least putts, Leslie D. Harrop.

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An Analysis of the Chlorophyll Problem

(*Continued from page 613*)

more anaerobic proteolytic putrefactive bacteria in carnivores and omnivores than in herbivores, and hence odors are much more intensive. Mercaptan, indol, and skatol are amongst the putrid decomposition products responsible for the most vile animal odors. In the very early spring if dairy cattle are turned out to pasture the milk is tainted with such a strong wild onion or garlic odor and flavor that it is rejected by the dairy inspector at the milk station. Later, however, when the grasses and legumes (alfalfas, peas, beans, clovers, etc.) come up and are consumed, the onion and garlic odors disappear.

In our own limited experiments with evil-smelling dogs, particularly those suffering from distemper or mange, small amounts of chlorophyllins (one to 10 milligrams) even when given TID or QID had little marked effect. However, when increased up to 100 to 200 mgs., the deodorizing action was more definitely established. This suggests an interesting topic for further research—"What is the cumulative effect of chlorophyll compounds in adequate dosage and taken over long periods?" Also, what is the action of saliva, bile, gastric and pancreatic juices on the liberation of usable chlorophyll on raw or cooked vegetables imbibed by animals and humans? If chlorophyll does absorb body odors as it does CO_2 in the leaf, then should it be assimilated in sufficient quantities in the blood stream so that it could be detected in the urine, like the asparagin in asparatus?

To deodorize body odors of dogs, large amounts of chlorophyll are needed—upwards of 10 to 100 milligrams administered four to six times a day. If dogs could be induced to eat lots of spinach, water cress, kale, or turnip greens, body odors might be controlled naturally. However, dogs rarely touch green vegetables except when sick. On the contrary, humans can be voluntary guinea pigs, especially if prone to obnoxious heavy summer perspiration odors, by trying liberal vegetable green diets over a long period. The alternative is for the legitimate drug and cosmetic industry manufacturers to greatly increase the concentration of soluble chlorophyllin with their primary objective the effective control of body effluvia. The dosage should be determined by experimentation, with ultimate possible government F & D assay standards for purity and dosage required and marked on the packages.

Bitches in season attract male dogs primarily by their vaginal discharge odors. Remarkable veterinary clinical authoritative reports have been published recently indicating that, given adequate prophylactic chlorophyll in doses up to 200 mgs. T.I.D., bitches in heat are frequently rendered so free of sex effluvia that male dogs will stay away. If experimental data continue to support this prophylactic success against "bitch in season odors," the value of chlorophyll in-

ternally should be irrefutably established. This to the author is the supreme test, for dogs have extraordinary neuroreceptor smell sense acuity, particularly when sex-motivated.

Chlorophyll as a Bactericidal Agent

We have grown in our laboratories experimentally varying strains of mesophyllic polyvalent micrococci in differential culture media inoculated with concentrations of all manner of chlorophyll products. The results showed that chlorophyll had no appreciable or demonstrable bactericidal or bacteriostatic activity, no matter how great the concentration. Laboratory alcohol extracted chlorphyll obtained from alfalfa (commercial source), clover, peas, beans, geranium leaves, kale, spinach, and grasses was non-inhibitory to bacterial growth, even to the delicate labile micrococci. If, therefore, we evaluate chlorophyllic deodorizing activity on its ability to inhibit or arrest the growth of spore-bearing putrefactive or decay bacteria we can discountenance it as virtually valueless.

Should we wish to change the intestinal flora of putrefactive bacteria, it is recommended that we return to outmoded bacillus bulgaricus or acidophilus cultured milk therapy to achieve these results. These flat sour organisms "quantum sufficiat" can completely change the microbial intestinal picture and render excreta almost odorless, and even colorless too. Some preparations now appearing on the market include an antibiotic, bacteriostatic, or bactericidal agent to inhibit putrefactive bacteria at their source, with chlorophyll to absorb odors. However, a mild bactericidal agent should be incorporated; otherwise there is danger of destroying the useful intestinal flora of microorganisms, as do oral sulfonamides and penicillin.

Chlorophyll as a Stimulant to Healing Processes

If chlorophyll were universally accepted as an adjuvant to tissue repair, surgeons would use it after surgical incisions to promote prompt healing by primary intention, as a standard prophylactic procedure. We have made under local anaesthesia incisions side by side in animals, treating one with and one without chlorophyll. Because the results must be read subjectively with time the only objective factor, we make only this presumptive statement, "Chlorophyll-treated wounds may heal faster and cleaner than non-chlorophyll-treated wounds." Whether it does stimulate tissue repair when applied locally and frequently is still a question. Much more work needs to be done over a long period by surgeons and veterinary surgeons before making any final conclusions on this debatable topic.

Chlorophyll Locally

Here you can try the experiments yourself using your own olfactory neuroreceptors. The results, however, are subjective. Rub some onion, garlic, cloves, rancid butter, beer, putrid meat or fish, tobacco juice on the

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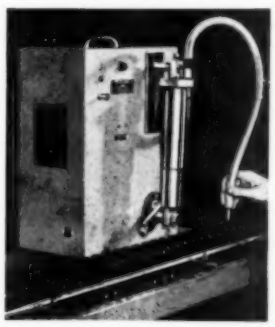

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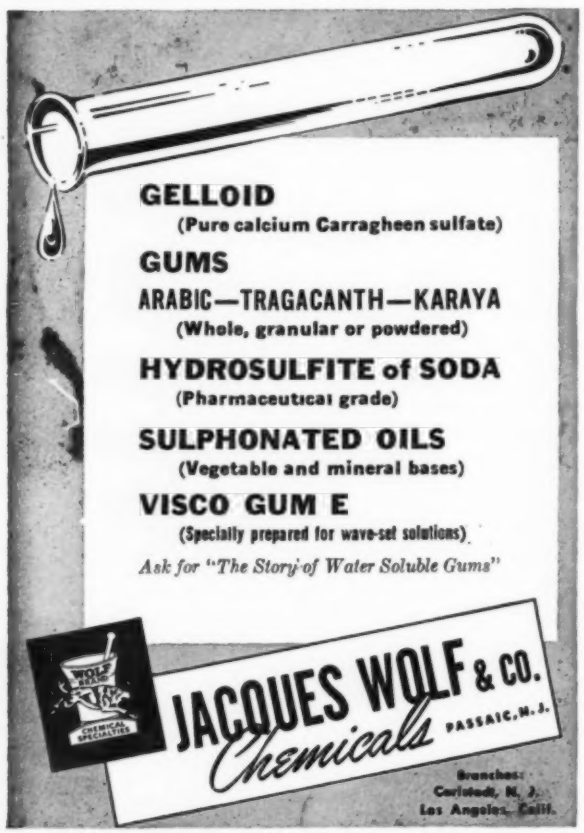

back of your hand, and then apply chlorophyll in various forms:

1. Squeeze it out from cooked spinach, kale, cabbage, or turnip greens.

2. Use soluble commercial chlorophyllins obtained from alfalfa.

3. Extract chlorophyll from any green leaves, preferably soft ones such as geranium or clover, with alcohol, evaporate to dryness or to a thick paste, and apply locally over the odorous area.

4. Cover odorous area with chlorophyll preparations such as mouth washes, tooth pastes, foot powders, ointments. Smell and be smelled by others at various intervals of from 60 seconds to two hours. Record results as xxxx fetid, xxx strong, xx weak, x faint, and 0 negative. Compare odor intensity before and after using. The judges should necessarily be free from colds, allergies, or upper respiratory infections.

5. Vary the amounts and strengths of chlorophyll and start all over again.

Our results appeared to be directly proportional to the amount of chlorophyll used or the concentration in the preparations tested, with many individual idiosyncrasies noted to confuse the results. We got maximum effect locally at sixty seconds with gradual decline to sixty minutes.

Athletic Body Odors

In any gymnasium, under intense athletic activity, human body odors are obviously in evidence. To several members of our wrestling and basketball team, 100-200 mgs. of chlorophyll tablets were given prophylactically one to two hours before participating in their competitive sports. The results were evaluated by their teammates or colleagues. These purely subjective results were generally very favorable in most instances, with odors noticeably reduced or stopped entirely. However, the apparent selectivity of chlorophyll was again proved in that in most cases individual odors were suppressed, while a few cases showed little or no improvement even under double dosage and cumulative action.

Assorted Laboratory Stinks

The anaergobic group of putrefactive bacteria offers a fertile field for studying smells, for so many body odors are due to their action in the alimentary canal. The very offensive perspiration odors of many individuals in the summer are due directly or indirectly to this group of proteolytic or saprolytic microorganisms which cause cleavage or hydrolysis of proteins, etc., with resulting indol, skatol, merthylmercaptans, $(NH_4)_2S$, and H_2S effluvia, which figuratively smell to high heaven.

In our experiments we used various proteus, mirabilis, and vulgaris strains, the clostridia, and other putrefactive anaerobes, culturing them aerobically in beef, pork, corn, mutton, fish, and banana infusions to produce our assorted obnoxious effluvia. We then titrated varying quantitative amounts of chlorophyll-containing prep-

arations and used them directly against the assorted smells, with and without the osmoscopes. These smells were so pungent that, no matter how much chlorophyll was used, and irrespective of the contact time, the odors were not markedly reduced *in vitro* (glass). We mixed equal parts of odorous material with concentrated chlorophyllin solutions and kept them for days, making periodic readings. Very little, if any, reduction in the intensity of odors was noted. We conclude from these experiments and those reported elsewhere that chlorophyll is comparatively ineffective in strictly laboratory tests *in vitro* (glass).

Controlled chlorophyll experiments using olfactometer, or osmoscope, to measure odors quantitatively have been painstaking and ethically carried out. Elaborate tests have been devised; however, all but three ultimately depend for their end point on the sensitivity of odor perception of the olfactory neuroreceptors. The Ellsberg Osmoscope is a method in which the odorous material to be tested is placed in a flask with double nose piece passing into each nostril. Then with a syringe attached an equal volume of air is injected into the flask. This forces an equal volume of odorous effluvia to flow into the nostrils. If the odor flows continuously over a long period, olfactory fatigue sets in. The technique could be used to determine preliminary neuro-olfactory disorders, desensitization, and resultant thresholds (see diagram).

200 Students Participating
100-200 Mgs. Chlorophyll Used in Tablets TID Against Body Odors

Body Odors

1 day—75 per cent effective
½ day—87 per cent effective
45 minutes—78 per cent effective
30 minutes—85 per cent effective

Dog, Mouth and Body Odor

120 minutes—75 per cent effective
60 minutes—78 per cent effective
30 minutes—81 per cent effective
45 seconds—80 per cent effective

Body and Perspiration Odors of Athletes

2 hours—83 per cent effective

5-10 Mg. Chlorophyll Chewing Gum Used to Check Tooth and Mouth Odors
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45 minutes—onions and garlic odors—80 per cent effective

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45 minutes—smoking odors—78 per cent deodorized

45 minutes—beer odors—85 per cent effective

30 minutes—onion and garlic odors—85 per cent effective

30 minutes—smoking odors—75 per cent effective

30 minutes—beer odors—85 per cent less odor

60 seconds—onions and garlic—82 per cent less odor

60 seconds—smoking odors—84 per cent less odor

60 seconds—beer odors—78 per cent less odor

The Barail modification of the Ellsberger methods uses a technique for humidifying and deodorizing the diluting air and controlling the pressure with a flowmeter. The Bryan modification is a direct line syringe pressure flow through the odorous material and the chlorophyll preparation being tested (see diagram). Another olfactory method features odorous material or odorous breath which is blown into rubber bags with nose piece and syringe attached.

The judges endeavor in all these devices to evaluate the odors forced by the syringe into thistle tubes, and thence through the nostrils via the nose piece. The minimum volume of canned breath is ascertained by noting the smallest amount which can be recognized by a panel of five judges, with five repetitions for each judge, and with five test products, making 125 evaluations possible. The judges are previously tested for olfactory neurosensitivity, and for freedom from colds and allergies.

Non-olfactory Techniques

1. The Ahmed, Campbell, non-olfactory technique depends on the deformation of water by active surface volatile substances in the atmosphere and identified by the Hygroscope, which picks up non-odorous surface agents. The results are measured in terms of relative humidity.

2. *Methyl mercaptan gas*, when passed through a baffle or filter soaked in chlorophyll and bubbled through tubes containing colorless hydriodic acid, may be measured in terms of the time taken to decolorize a standard iodine solution. Then the quantity of mercaptan stopped by chlorophyll is recorded. These objective techniques have been used very extensively recently.

Results

The time intervals for the mercaptan to pass through water as compared with chlorophyll solutions proved to be practically identical. Chlorophyll did not appear to reduce the amount of gas passing over the iodine indicator, showing that in glass, chlorophyll is of no apparent value.

Subjective Group Tests with 200 Students Participating

In our experiments with flavored chewing gum and candy containing five mgs. soluble chlorophyllin, over 200 student volunteers participated in the experiments. While the results were less accurately determined than with regular trained judges, our data have more diagnostic value because of the number of testers involved (see charts).

Students reported on stenciled data slips before and after chewing gum for three to five minutes odors as xxxx fetid, xxx strong, xx noticeable, x weak, and 0 negative, and also the time intervals of odor persistence after chewing gum. Olfactory sensitivity tests were run as far as possible, but the results were only relative and presumptive and not statistically infallible. Generally trends indicated that odors were cut down from xxxx to xxx, to xx, x, or 0, within a minute or so and decreasing deodorization continued for from one to two hours. The final evaluation showed mouth deodorization with two minutes' contact in from one to 60 minutes using 5-15 mgs. sodium copper chlorophyll against beer, onion oil, and tobacco smoke. Maximum effect was noted in 45 seconds using candy flavor coated chlorophyll chewing gum, in three minutes' chewing time.

Conclusions from the 200 Student Observations Indicated

1. Flavored chlorophyllic gum or candy gave best results using at least 5-10 mgs. chlorophyllin at scheduled intervals. Mouth washes containing five mgs. chlorophyllin to the ounce gave fairly uniform results also, reducing odors from xxxx to xx in from one to 60 minutes. Tooth pastes on the market varied considerably, depending on: 1. amount of chlorophyll incorporated, and contact time in mouth or on teeth; 2. strength of flavoring agents used; 3. availability and time factor of the chlorophyllins when released in the oral cavity; 4. action of the saliva and diluent; 5. the antiseptic incorporated in the preparation and its germicidal coefficient; 6. a thorough brushing with a

chlorophyll tooth paste for one minute, following by a mouth rinsing or gargling using the rinse water and the tooth paste still in the mouth, produced the most gratifying results and over the longest time period.

Kissing Bugs

In the author's previous work entitled "Kissing Bugs," frequent tooth brushing and mouth rinsings with chlorophyllic tooth paste were evaluated. Chlorophyll chewing gum used in the intervals between the dental prophylaxis produced the best over-all results. In reducing mouth and dental odors there are three problems to make breath "kissing sweet."

1. Dosage, concentration, frequency, and cumulative action of chlorophyll.

2. Selectivity—individual idiosyncrasies—like sulfa drugs and antibiotics.

3. The belch odors so objectionable in kissing appear to be best controlled by antacids and chlorophyll combined. The antacids considered most effective in practice are $CaCO_3$ and $MgCO_3$, magnesium and aluminum hydroxide and magnesium trisilicate combined with at least five to 10 mgs. of soluble chlorophyllins. The hydroxides neutralize or buffer the stomach acids, and the chlorophyllins apparently absorb most gaseous odors.

4. Older persons should be particularly scrupulous in their oral hygienic habits if they still find kissing a pleasant pleasing pastime. The younger generation, too, by imbibing beer, drinking liquors, excessive smoking, or eating strong garlic-flavored foods, etc., may suffer from induced belch odors and offensive breath.

Chlorophyll in green foods or in pharmaceutical preparations appears to be one of the answers to, "To smell or not to smell, to kiss or not kiss, to caress or not to caress, that is the question," as Shakespeare might have put it.

While fragrant odors may temporarily mask offensive odors, the prevention and absorption of bodily effluvia should be the main objective of the research workers in the drug and cosmetic industry. In addition, dental and oral hygiene, bodily cleanliness, corrective foods, lip protection, treatment of gastric and duodenal ulcers, and medical treatment of excessive perspiration odors are among the armentaria to be utilized in an all-out attack on offensive mouth and body effluvia.

Conclusions

1. Although our experiments indicate that chlorophyll has little or no deodorizing value *in vitro* (glass), we are not justified in trying to wreck the new and thriving chlorophyll industry based on these results. Biochemists have failed to produce even the simplest synthetic starch and sugar compounds in the test tube using chlorophyll, sunlight, and the raw products CO_2 and H_2O. Chlorophyll synthesizes food only in the living leaf, and its deodorizing value, too, apparently is effective only in living tissues.

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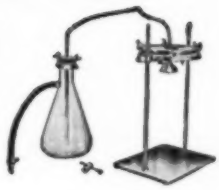

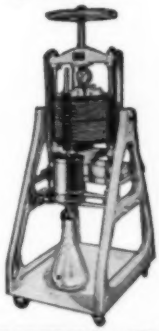

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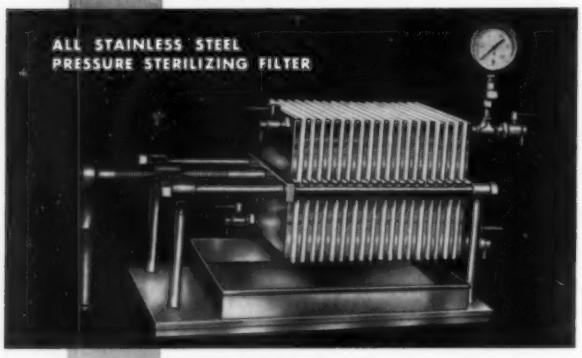

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2. Favorable deodorizing effects of chlorophyll are observed *in vivo*.

3. Chlorophyll has no demonstrable bactericidal or bacteriostatic activity.

4. Whether or not chlorophyll stimulates the healing process is still a question; so further research, veterinary and medical, is indicated.

5. Mouth and teeth odors may be reduced in most individuals with chlorophyll-flavored tooth pastes, chewing gum, candies, mouth washes, and tablets, provided adequate dosage (5-10 mgs. of chlorophyll) is used and maintained repeatedly as needed.

6. Veterinary research indicates that most animal odors, both mouth and body, and in addition vaginal odors of bitches in season, may be reduced or even eliminated with scheduled 100 to 200 mg. doses of chlorophyll, especially when cumulative action sets in.

7. Human body and perspiration odors may be reduced in many individuals with repeated 100 to 200 mg. doses of soluble chlorophyllins in four to six hours after taking.

8. Chlorophyll *in vivo* is apparently selective in its action, being very effective in some individuals and against most odors, but relatively valueless in a few cases.

9. Individual idiosyncrasies to chlorophyllic action may be noted in some humans and animals.

10. Perspiration odors of athletes may be prevented in many cases by prophylactic use of chlorophyll in high potency doses of 100 to 200 mgs. given one to two hours before participation in sports.

11. "Kissing sweet" can become a reality if dental and oral hygienic measures are carried out, which include chlorophyllic dentifrices, mouth washes, chewing gums, and candies, the last two being used in the intervals between the tooth brushings.

12. Belch odors may be relieved usually by combining adequate chlorophyll concentration with antacids such as $Mg(OH)_2$, $Al(OH)_3$, magnesium trisilicate, etc.

13. Further research in the biochemical metabolism of chlorophyll in human and animal tissues is clearly indicated before drawing any arbitrary conclusions.

14. It is recommended that the U.S.D.A. might set up assay standards for dosage, concentration, potency, and possible deodorizing activity for chlorophyll preparations at present on the market.

15. Ethical manufacturers should stipulate on their packaging of the chlorophyllic compounds the concentration or amount used in each unit, such as tablets, candies, or per ounce of tooth paste, etc.

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1. Acknowledgments for supplies of chlorophyll products used in these experiments:
American Chickle Co., New York, N. Y.
Pearson Pharmaceutical Co. Inc., New York, N. Y.
Pitman Moore Co., Indianapolis, Ind., Allied Laboratories.
Rystan Co. Inc., Mount Vernon, N. Y.
Whitehall Pharmacal Co., New York, N. Y.

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Hexachlorophene in Cosmetics

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were then prepared for inoculation into pour plates containing nutrient agar fortified with 10 per cent horse serum. Counts of bacterial colonies were made after incubation of the plates for 24 hours at 37° C.

The test products were applied by the subjects twice daily on Monday through Thursday. On the days on which the sweating tests were conducted, the applications were made following the sweating. On Friday only one, the final application of the test materials was made following the sweating test. All applications were supervised by a member of the laboratory staff.

In the tests of the deodorant powders, 0.5 gm. of each powder was spread uniformly over the cutaneous surface of the axilla by means of a pledget of sterile cotton. The quantities of deodorant sticks applied to subjects' axillas were determined by weighing the sticks before and after use. The figures obtained indicated a good correlation of the cutaneous surface of the axillas and the amounts applied to the skin. These quantities varied from 0.372 gm. to 0.984 gm. with a means of 0.565 gm. Comparative quantities of the deodorant sticks applied by a subject to her axillas in any one test were surprisingly close, also the amounts of either stick applied on different days.

The odor values and counts of cutaneous bacteria on the morning of the first day, before the test products were applied, are used as the basis for determining the effects of the test products on subsequent days. The P.M. sweatings and samplings occurred about four hours after the morning application of the test products. Data from the P.M. tests of the first day establish the immediate benefits to be derived from the use of these preparations. Subsequent determinations are indicative of the cumulative action of the test products. The A.M. sweatings and samplings occurred about 20 hours after application of the test products. Finally, the findings on the eighth day of the test followed a period of three days during which the subjects refrained from using the test products; these results establish the persistence of the affects of these preparations.

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Results

The average percentage reductions of the bacterial population of the five subjects' axillas during the test period are summarized in Table 1 for the four preparations.

TABLE 1
Reduction of Cutaneous Bacteria by Preparations under Test

Day of Test Period	Time of Day	Per cent Reduction With Hexachlorophene Powder	Control Powder	With Hexachlorophene Stick	Control Stick
1st	A.M.	86	10	96	22
3rd	A.M.	over 99	35	over 99	40
	P.M.	" 99	37	" 99	85
5th	P.M.	over 99	44	over 99	82
8th	A.M.	95	5% Increase	97	43

The decrease of the number of the cutaneous bacteria in the axillas during the test period is also determined by the curves on Charts 1 and 2.

Tables 2 and 3 show the intensities of odors of perspiration collected from the various subjects throughout the test period.

Inspections of the data in Table 2 will show that none of the 38 samples of perspiration collected during periods of application of the powder containing haxochlorophene gave intensities of odors of eight or more. In fact, there is evident a fairly uniform downward trend from the first to the fifth day. On the other hand, 34 of the 40 samples of perspiration collected during periods of application of the control powder exhibited dilution numbers of eight or more.

The same situation exists in the case of the deodorant sticks (Table 3). The preparation containing hexachlorophene is definitely a more efficient inhibitor of the development of offensive or objectionable odors than the stick without hexachlorophene.

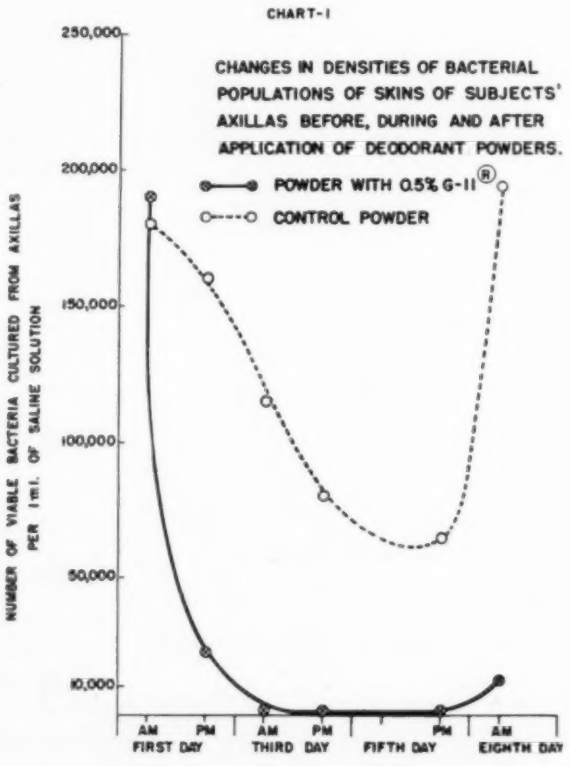
Gravimetric measurements of amounts of perspiration collected from subjects' axillas during sweating indicated no significant difference between the administration of the hexachlorophene preparations and the controls.

Discussion

The results of the cutaneous bacteria samplings and the odor measurements show that both the powder and stick containing hexachlorophene are effective deodorants. One of the most striking results is the immediate anti-bacterial effect produced by these products. Hand washing tests with soaps containing hexachlorophene have shown that three to five days of use are required to achieve maximum degerming of the skin. In using the powder and stick with hexachlorophene, adequate degerming and odor reduction are achieved almost immediately after the first application. This is probably due to the fact that the power and stick are not rinsed off the skin as in the case of soap, thereby increasing the time of contact between hexachlorophene and the skin and also leaving a higher concentration of hexachlorophene on the skin.

Although immediate degerming is achieved, the results show further slight decrease in bacterial population and odor after several days of use.

The control samples, both powder and stick, produced some reduction in cutaneous bacteria and perspiration odor, although it was appreciably less than when hexachlorophene was present. In the case of the powder, it is probable that some bacteria adhered to particles of powder which were physically removed from the



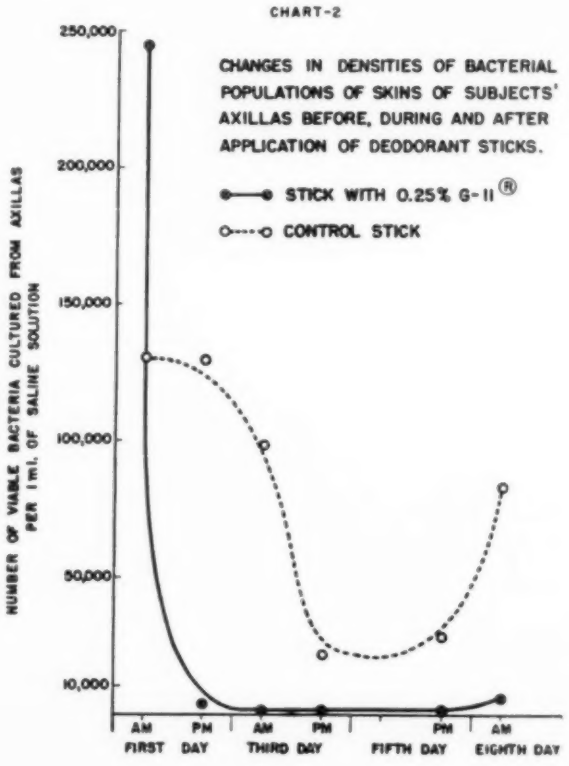


TABLE 2

Deodorant Powder

Intensities of odors (as dilutions with air) of incubated samples of perspiration collected from subjects' axillas

Day of test	Time of day	Subjects	Number of applications	Right axilla: Powder with 0.5 per cent Hexachlorophene	Right axilla: Control	Left axilla: Powder with 0.5 per cent Hexachlorophene	Left axilla: Control
	A.M.	1		16	16	16	8
		2		8	8	8	8
First		3	0	16	16	8	16
		4		8	8	16	16
		5		16	16	16	16
	P.M.	1		4	8	4	8
		2		4	16	4	16
		3	1	2	16	4	16
		4		—	16	—	16
		5		4	16	4	16
	A.M.	1		4	16	4	16
		2		2	8	2	8
Third		3	4	2	16	4	16
		4		4	16	4	16
		5		4	8	4	16
	P.M.	1		2	8	2	8
		2		2	16	2	8
		3	5	4	16	4	8
		4		2	8	4	16
		5		4	4	4	4
	P.M.	1		2	8	2	8
		2		2	4	2	8
Fifth		3	9	4	4	2	8
		4		2	8	2	8
		5		2	4	2	4
	A.M.	1		4	16	8	32
		2		4	16	4	32
Eighth		3	9	8	16	4	16
		4		8	16	8	16
		5		4	8	4	8

TABLE 3

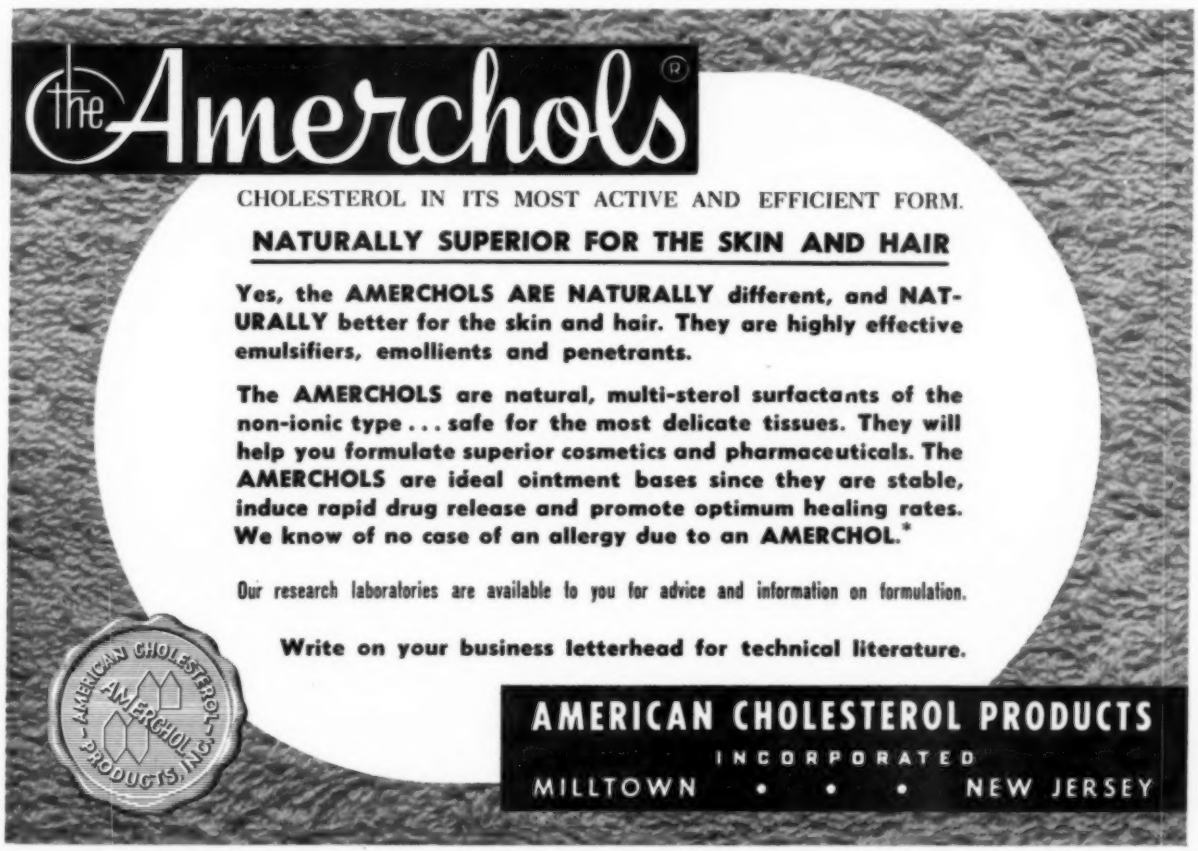
Deodorant Stick

Intensities of odors (as dilutions with air) of incubated samples of perspiration collected from subjects' axillas

Day of test	Time of day	Subjects	Number of applications	Right axilla: Stick with 0.25 per cent Hexachlorophene	Right axilla: Control	Left axilla: Stick with 0.25 per cent Hexachlorophene	Left axilla: Control
	A.M.	1		8	16	8	16
		2		16	16	16	16
First		3	0	16	8	16	16
		4		16	16	8	32
		5		16	8	16	16
	P.M.	1		4	8	4	16
		2		8	8	8	16
		3	1	8	16	8	16
		4		4	16	4	16
		5		4	8	4	16
	A.M.	1		4	8	4	8
		2		4	8	4	16
Third		3	4	2	16	4	16
		4		2	16	2	16
		5		2	8	2	8
	P.M.	1		2	8	2	8
		2		2	8	1	4
		3	5	1	8	2	8
		4		2	16	2	16
		5		1	8	1	8
	P.M.	1		2	8	2	4
		2		1	4	1	4
Fifth		3	9	2	8	2	8
		4		1	16	1	16
		5		1	4	1	8
	A.M.	1		4	16	8	8
		2		4	16	4	16
Eighth		3	9	2	16	4	32
		4		4	16	4	32
		5		2	16	2	16

skin due to abrasion and erosion as the subjects went about their daily routine. In the case of the control stick, a similar action may have occurred, and also, the alcohol in the preparation would exert some antibacterial effect.

While the controls showed some effect during the test it is evident that they did not offer any prolonged antibacterial action since the cutaneous bacteria and perspiration odor rose to pre-test levels within 72 hours after use was discontinued, whereas the powder and stick with hexachlorophene afforded adequate protection after this period. Considering the practical usage of deodorant products, the continuous and persistent action of hexachlorophene, throughout several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days during which no deodorant is used, is particularly significant.

Summary

A body powder and deodorant stick, containing 0.5 and 0.25 per cent hexachlorophene respectively, have been found to effect over a 99 per cent reduction in the bacterial population of the axillary fossa. The odor of perspiration collected from the axillary fossa was reduced to levels which were not objectionable. These findings and those reported by other investigators on creams and lotions show the effectiveness of hexachlorophene as a skin-degerming and deodorizing agent for cosmetics.

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April 21, 1953

Patent Thoughts and Trends

(*Continued from page 677*)

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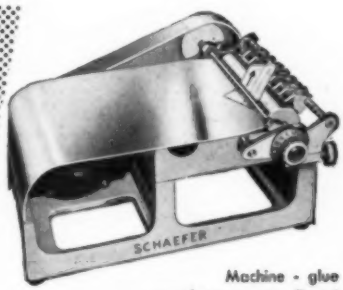

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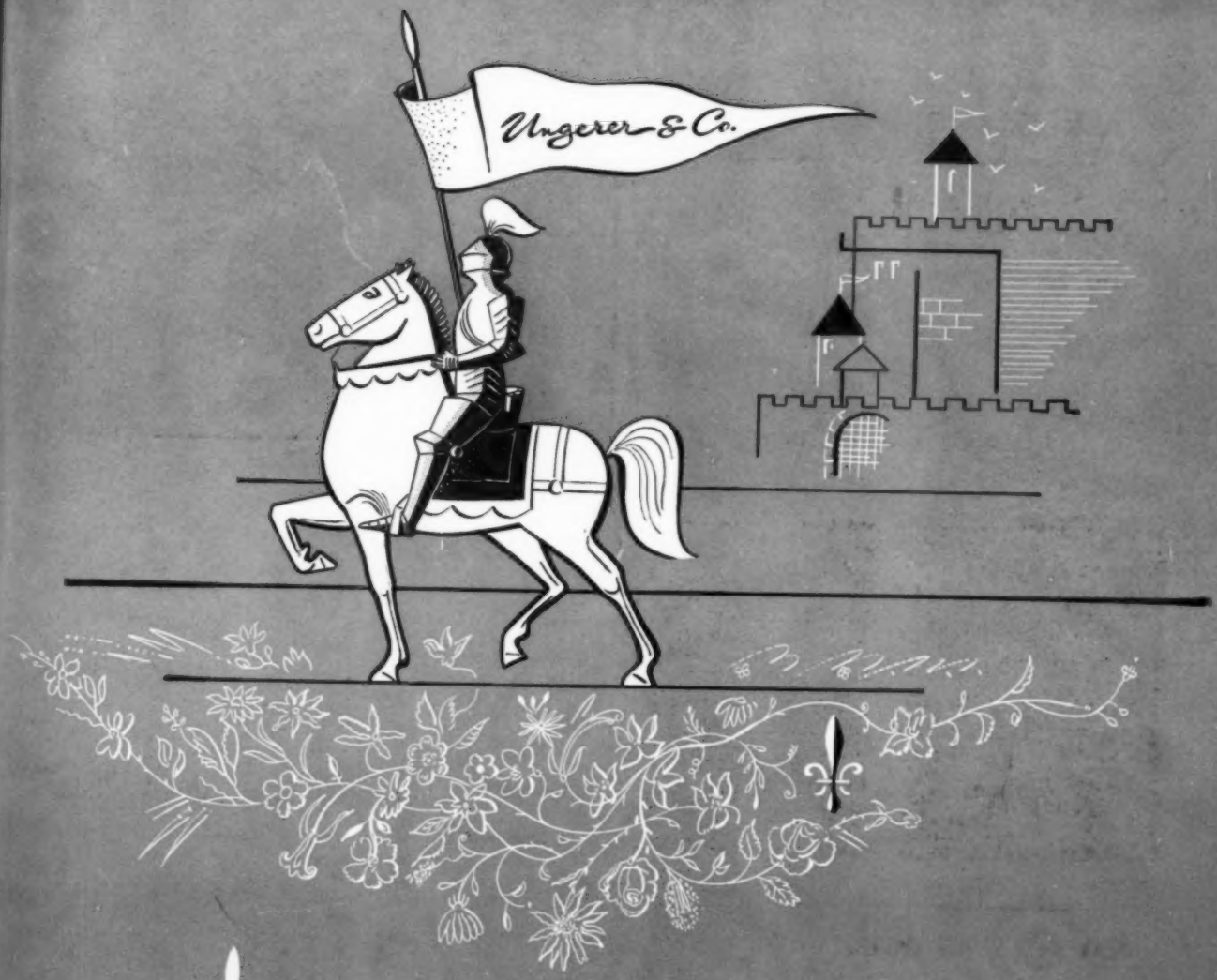

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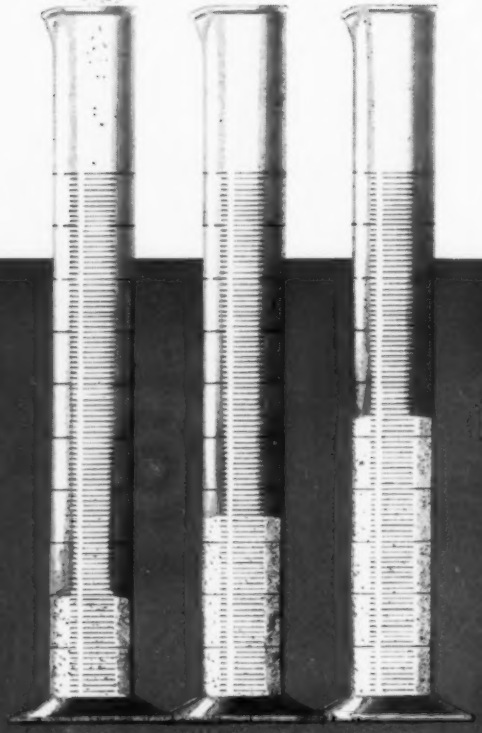

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